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Nine Pages.

AL-46-700285-3
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PAR 244

Spare Parts for RT Processors

26 October 1966

Declass Review by NGA.

PROJECT AUTHORIZATION REQUEST

PAR 244

26 Oct 66

SUBJECT: Spare Parts for RT Processors

TASK PROBLEM

1. Provide spare parts for the RT-12 and RT-24 Processors.

PROPOSAL

2. The spare parts listed in Attachment No. 1 (RT-12 Processor) and Attachment No. 2 (RT-24 Processor) will be shipped to the customer. according to the schedule shown in Figure 1.

3. PAR 244 was approved by customer message 8078, dated 11 Aug 66. Approval was based on the contractor's ROM Estimate and Parts List (letter AL-45-800150- , dated 12 Oct 65), and changes to that document by the customer. The formal submission of this PAR is intended to document the list of spare parts to be supplied.

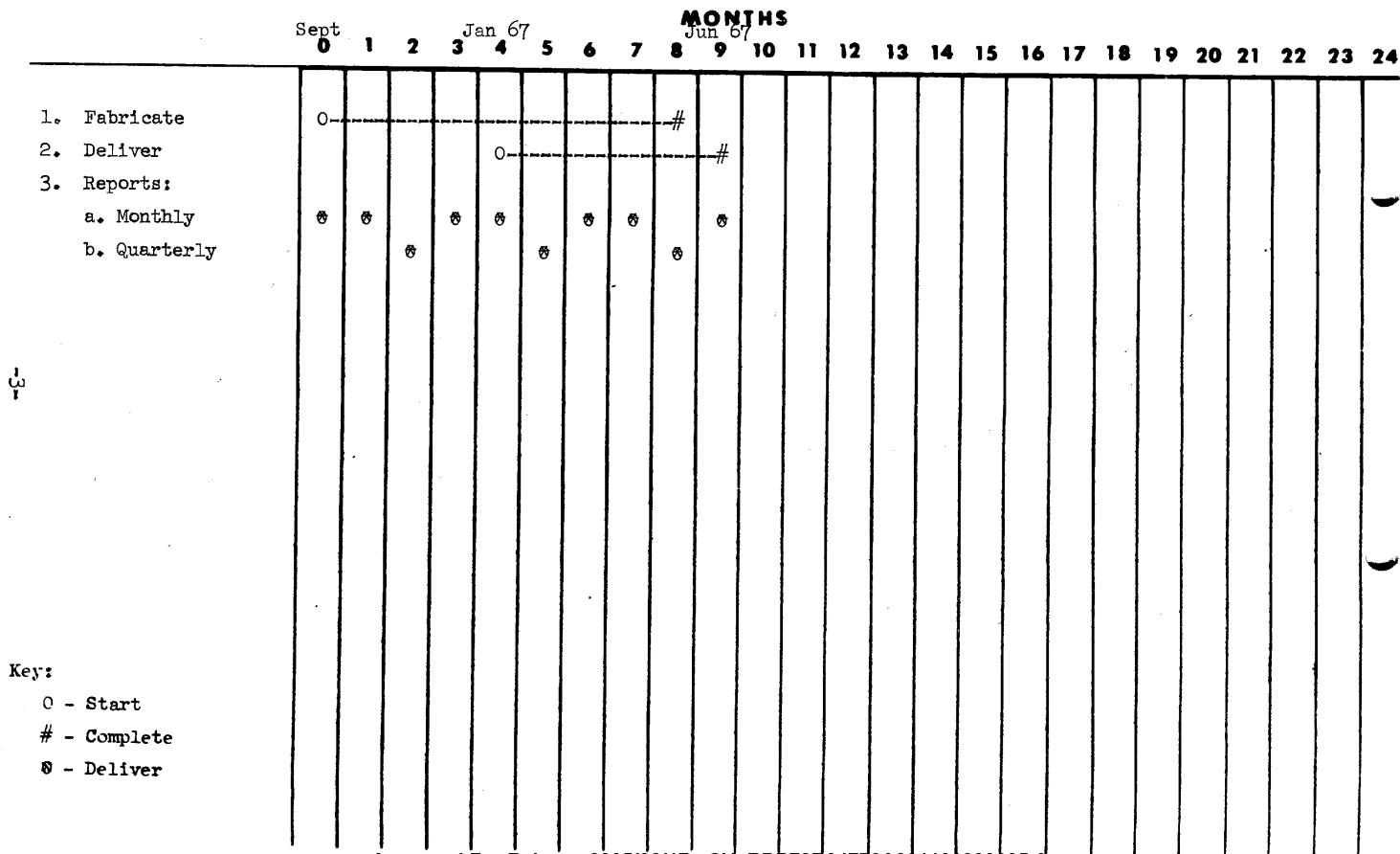
4. No final report will be submitted. Monthly and Quarterly Reports will report only on the percent of parts completed and delivered.

TENTATIVE SCHEDULE

PAR 244

26 Oct 66

Spare Parts for RT Processors



AL-46-800736- /

10 November 1966

Dear Boyd:

Subject: Contract PAR 244. Proposal and Cost Estimate for RT-12
and RT-24 Processor Spare Parts

The subject proposal and cost estimate is submitted herewith under the conditions stated in the attached proposal AL-46-700285 and the cost breakdown AL-46-402441.

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RRW:eb


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Copy #1: BN w/encs. AL-46-700285-1 thru 5
AL-46-402441-1 & 2
2: JP w/encs. AL-46-700285-6
AL-46-402441-3

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Next 1 Page(s) In Document Exempt

Approved For Release 2005/02/17 : CIA-RDP78B04770A001100030005-3

ATTACHMENT No. 1
to PAR 244

26 Oct 66

RT-12 PROCESSOR - SPARE PARTS

<u>Quantity</u>	<u>Part Number</u>	<u>A.P.S. Part No.</u>	<u>Description</u>
5	120-B-005		Sprocket
64	120-A-016	457459-A	Bearing
20	120-B-022	457463-A	Gear - 3" Diameter Roll
3	120-C-026		Subassembly - 3" Diameter Roll
5	120-B-028		Sprocket
10	120-A-035		Gear
2	120-A-036		Gear
24	120-A-037	452252	Bearing
14	120-A-038	452354	Bearing
12	120-A-040	453721	Bearing
2	120-A-041		Gear
1	120-B-047	453742	Roll Assembly - .980" Diameter
7	120-B-050	452929	Special Screw
1	120-B-051	453739	Roll Assembly - .730" Diameter
2	120-B-052	453452	Roll Assembly - .730" Diameter
3	120-B-054	453551	Roll Assembly - .980" Diameter
1	120-B-058	453738	Roll Assembly - .730" Diameter
1	120-A-059		Gear
17	120-A-063	454418	Bearing
2	120-A-068		Bearing
1	120-A-070		Gear
2	120-A-073	452215	Bearing
1	120-B-089		Subassembly - 1" Diameter Roll
1	120-B-090		Subassembly - Grooved Roll
2	120-B-092		Gear
1	120-B-095		Gear
30	120-B-099	452016	Special Nut
1	120-B-100		Gear
1	120-C-109		Master Roll
2	120-C-110		Roll
10	120-C-114	452023	Drive Gear
16	120-A-141	452270	Bearing
4	120-A-146	452284	Bearing
4	120-A-148	452289	Bearing
2	120-A-151	452338	Bearing - Oilite #A-529
1	120-A-155	453607	Gear
1	120-A-157	453609	Gear
1	120-A-165	453620	1/4" P. Chain and Conn. Link
1	120-A-166		1/4" P. Chain and Conn. Link - Diamond #ASA 25

Quantity	Part Number	A.P.S. Part No.	Description
2 ✓	120-A-168		Bearing - Oilite #FF-620-7
1 ✓	120-B-173	453627	Drive Pulley - Small
1	120-C-183		Drive Gear
1 ✓	120-C-184	454428	Master Gear
1	120-B-187		Drive Pulley
18	120-C-188		Worm Gear
6 ✓	120-A-706	453464	Drive Pulley Assembly
6 ✓	120-B-197	455616	Roll Assembly - 1" Diameter
4	120-B-217		Roll Assembly - 3" Diameter
3	120-A-230		Bearing - Oilite #T-710-1
1 ✓	120-B-246	452148-C	Worm
1 ✓	120-B-247	453528-A	Worm Gear
1	120-A-264		Bearing
2 ✓	120-A-265		Bearing - Oilite #AA-304-2
2	120-A-266		Bearing
3 ✓	120-A-267		Bearing
2	120-A-270		Spring
30 ✓	120-A-296	452387	Ball Bearing
8	2-949-B-009		Ball Bearing
2	120-A-708		Air Pressure Switch - United Electric #4693
4 ✓	120-A-295		Drive Belt - Brown Mfg. Co. #S-10
2	120-B-307		Subassembly Flanged Down-Path Roll
10	120-B-308		Subassembly Plain Down-Path Roll
2	120-B-312		Subassembly Flanged Up-Path Roll
10	120-B-313		Subassembly Plain Up-Path Roll
16 ✓	120-A-336	452112-C	Stud- Idler
32 ✓	120-A-339	452113-A	Idler
150 ✓	120-B-340	452548-A	Stud - Rack Rolls
16 ✓	120-B-345		Screen - Rack
32	120-B-380		Bearing
34	120-A-396	457196	Ladder Chain - Rack
1	120-B-413		Subassembly foam Covered Roll
4 ✓	120-A-426	453460	Gear
4 ✓	120-A-428		Bearing
8 ✓	120-A-429	452252	Bearing
2 ✓	120-A-431	452246	Bearing
1 ✓	120-A-437	452244	Gear
1 ✓	120-A-442	457484	Bearing
1 ✓	120-B-444		Subassembly - Deflector Roll
1 ✓	120-B-448		Master Roll
1	120-B-449		Subassembly - 1" Diameter Roll
2 ✓	120-A-454		Drive Belt
2 ✓	120-A-462		Bearing
4 ✓	120-A-469		Bearing - Oilite #A-521-1
2	120-B-481		Roll
2	120-A-510		Lamp - G.E. #30R-20
1	120-A-539		Fuse - 15 amps - Bussman #NON-15

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<u>Quantity</u>	<u>Part Number</u>	<u>A.P.S. Part No.</u>	<u>Description</u>
1	120-A-541		Fuse - 6 amps - Bussman #NON-6
6 ✓	120-A-554		Bearing
2	120-A-555		Gear
1	120-A-556		Gear
1	120-A-557		Gear
1	120-A-560		Insert for Gear 120-A-561
1	120-A-561		Gear
28 ✓	120-A-568		Lamp - G.E. #PH-111
1 ✓	120-A-643		Heater - Chromalox #CAB-611
1	120-A-644		Filter - Make-up Air-Owen-Corning Type "C"
1	120-A-695		Bearing
8 ✓	120-A-1244		Neon Lamp - G. E. #NE-51
3	120-A-1301		Fuse - 20 Amps - Bussman #NON-20
5	120-A-1303		Fuse - 10 Amps - Bussman #NON-10
1 ✓	120-A-1332		Filter - Blower-Mine Safety Appliances #A-958
1	120-A-1453		Resistor - Ohmite #0208
2	120-A-707		Pump Seal - Crane #9, QP1C1
1	1-120-D-032		Rebuild RT-12 Rack to Provide G-10 Side Plates and Poly- covered rolls.

ATTACHMENT No. 2
to PAR 244

26 Oct 66

RT-24 PROCESSOR - SPARE PARTS

<u>Quantity</u>	<u>Part Number</u>	<u>A.P.S. Part No.</u>	<u>Description</u>
5	120-B-005		Sprocket
30 ✓	120-B-010	457345	Stud
50	120-A-016	457459-A	Bearing
182	120-A-018		Bearing
20 ✓	120-B-022	457463-A	Gear
5	120-B-028		Sprocket
14	120-A-035		Gear
8	120-A-036		Gear
24 ✓	120-A-037	452252	Bearing
14 ✓	120-A-038	452354	Bearing
12 ✓	120-A-040	453721	Bearing
5	120-A-041		Gear
7 ✓	120-B-050	452929	Special Screw
2	120-A-059		Gear
20 ✓	120-B-099	452016	Special Nut
25 ✓	120-C-114	452023	Gear
8 ✓	120-A-141	452270	Bearing
4 ✓	120-A-146	452284	Bearing
4 ✓	120-A-148	452289	Bearing
3 ✓	120-A-151	452338	Bearing - Oilite #A-529
1 ✓	120-A-157	453609	Gear
2 ✓	120-A-168		Bearing - Oilite #FF-620-7
1 ✓	120-B-173	453627	Drive Pulley
1	120-B-187		Drive Pulley
2	120-C-188		Worm Gear
6 ✓	120-A-706	453464	Drive Pulley Assembly
3	120-A-230		Thrust Bearing - Oilite #T-710-1
1 ✓	120-B-246		Worm
1 ✓	120-B-247	453528-A	Worm Gear
2 ✓	120-A-264		Bearing - Oilite
2	120-A-266		Bearing
3 ✓	120-A-267		Bearing
2	120-A-268		Bearing - Oilite #T-601
2	120-A-270		Spring
2	120-A-708		Air Pressure Switch -
30 ✓	120-A-296	452387	United Electric #4693
			Ball Bearing

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RT-24 Processor - Spare Parts

ATTACHMENT No. 2
to PAR 244
26 Oct 66

Quantity	Part Number	A.P.S. Part No.	Description
24 ✓	120-A-336	452112-C	Stud
24 ✓	120-A-339	452113-A	Idler
100 ✓	120-B-340	452548-A	Stud
24	120-B-380		Bearing
27 ft.	120-A-396	457196	Chain - Rack
2 ✓	120-A-423	458055	Friction Pin
4 ✓	120-A-426	453460	Spur Gear
4 ✓	120-A-428		Bearing
20 ✓	120-A-429	452252	Bearing
4 ✓	120-A-431	452246	Bearing
2 ✓	120-A-436	452947	Spur Gear
2 ✓	120-A-437	452244	Spur Gear
2 ✓	120-A-441	458057	Bearing Retainer
4 ✓	120-A-442	457484	Bearing
2 ✓	120-A-443	458056	Spring
6	120-B-1007		Roll Subassembly - .730" Diameter
6	120-B-1009		Roll Subassembly - 1.000" Diameter
1 ✓	120-B-1020		Subassembly Upper Pacer Roll
20	120-B-1041		Subassembly - 1" Diameter Cluster Roll
4	120-B-1043		Master Roll
1	120-B-1049		Gear Gudgeon - Short
2	120-B-1050		Gear
1 ✓	120-B-1051		Subassembly - Lower Pacer Roll
1	120-B-1052		Gear Gudgeon - Long
2	120-C-1057		Subassembly - Master Roll
20 ft 1 ✓	120-A-1058		1/4" P. Chain and Conn. Links - Diamond #25
1	1-120-D-1059		Rack Assembly and Turnaround
1	120-A-1071		Drive Gear
1	120-A-1072		Driven Gear
12	120-B-1073	457209	Screen - Rack
112	120-B-1076		Subassembly - Rack Roll
2	120-B-1085		Rack Subassembly - .980" Diameter
2	120-B-1088		Roll Subassembly - .730" Diameter
2	120-B-1089		Roll Subassembly - .730" Diameter
5	120-B-1091		Roll Subassembly - .980" Diameter
2	120-B-1113		Subassembly - Flanged Up-Path Roll
2	120-B-1116		Subassembly - Flanged Down-Path Roll
10	120-B-1117		Subassembly - Plain Up-Path Roll
10	120-B-1118		Subassembly - Plain Down-Path Roll

<u>Quantity</u>	<u>Part Number</u>	<u>A.P.S. Part No.</u>	<u>Description</u>
2	120-A-1152		Sleeve - Deflector Roll
2	120-A-1153		Sleeve - Rubber Covered Roll
2	120-A-1155		Spur Gear
2	120-A-1156		Spur Gear
4 ✓	120-A-1157		Drive Belt - Garlock #15-227-5
2	120-B-1159		Subassembly - Foam Covered Roll
4	120-B-1162		Subassembly - 1" Diameter Roll
2 ✓	120-B-1164		Subassembly - 3" Diameter Roll
2 ✓	120-A-1244		Neon Lamp - G.E. #NE-51
6	120-A-1301		Fuse - 20 amps - Bussman #NON-20
3	120-A-1303		Fuse - 10 amps - Bussman #NON-10
3	120-A-1304		Fuse - 30 Amps - Bussman #NON-30
4	120-A-1322		Drive Belt - BUNA-N #ARP-568-233
1 ✓	120-A-1324		Filter - Make-Up Air - Owens- Corning Type "C"
2 ✓	120-A-1332		Filter - Blower - Mine Safety Appliances #A-958
2	120-A-1372		Bearing
1 ✓	120-A-1376		Heater - Dryer - Chromalox #CAB-2511
1	120-C-1380		Master Roll
6	120-B-1384		Bearing
1	120-C-1388		Deflector Roll
1	120-A-1453		Resistor - Ohmite #0208
1	120-A-707		Pump Seal - Crane #9,QP1C1

Approved For Release 2005/02/17 : CIA-RDP78B04770A001100030005-3
 ESTIMATE AO 65-636
ROM PRICE LIST OF RECOMMENDED SPARE PARTS FOR THE RT-12 AND RT-24 PROCESSORS

AL-35-400527- /

25X1

RT-12 Processor; Recommended Spare Parts

<u>Quantity</u>	<u>Part No.</u>	<u>A.P.S. Part No.</u>	<u>Description</u>
25	120-B-013		Roll Assembly - 1" Diameter
64	120-A-016	457459-A	Bearing
20	120-B-022	457463-A	Gear - 3" Diameter Roll
3	120-C-026		Subassembly - 3" Diameter Roll
10	120-A-035		Gear
2	120-A-036		Gear
24	120-A-037	452252	Bearing
14	120-A-038	452354	Bearing
12	120-A-040	453721	Bearing
2	120-A-041		Gear
1	120-B-047	453742	Roll Assembly - .980" Diameter
7	120-B-050	452929	Special Screw
1	120-B-051	453739	Roll Assembly - .730" Diameter
2	120-B-052	453452	Roll Assembly - .730" Diameter
3	120-B-054	453551	Roll Assembly - .980" Diameter
1	120-B-058	453738	Roll Assembly - .730" Diameter
1	120-A-059		Gear
17	120-A-063	454418	Bearing
2	120-A-068		Bearing
1	120-A-070		Gear
2	120-A-073	452016	Bearing
1	120-B-089		Subassembly - 1" Diameter Roll
1	120-B-090		Subassembly - Grooved Roll
2	120-B-092		Gear
1	120-B-095		Gear
30	120-B-099	452016	Special Nut
1	120-B-100		Gear
1	120-C-109		Master Roll
2	120-C-110		Roll
10	120-C-114	452023	Drive Gear
16	120-A-141	452270	Bearing
4	120-A-146	452284	Bearing
4	120-A-148	452289	Bearing
2	120-A-151		Bearing - Oilite #A-529
1	120-A-155	453607	Gear

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 ESTIMATE AO 65-636
ROM PRICE LIST OF RECOMMENDED SPARE PARTS FOR THE RT-12 AND RT-24 PROCESSORS

AL-35-400527-1

25X1

RT-12 Processor; Recommended Spare Parts (Cont'd)

<u>Quantity</u>	<u>Part No.</u>	<u>A.P.S. Part No.</u>	<u>Description</u>
1	120-A-157	453609	Gear
1	120-A-165	453620	1/4" P. Chain and Conn. Link
1	120-A-166		1/4" P. Chain and Conn. Link - Diamond #ASA 25
2	120-A-168		Bearing - Oilite #FF-620-7
1	120-B-173	453627	Drive Pulley - Small
1	120-C-183		Drive Gear
1	120-C-184	454428	Master Gear
1	120-B-187		Drive Pulley
18	120-C-188		Worm Gear
6	120-A-706	453464	Drive Pulley Assembly
6	120-B-197	455616	Roll Assembly - 1" Diameter
4	120-B-217		Roll Assembly - 3" Diameter
3	120-A-230		Bearing - Oilite #T-710-1
1	120-B-246	452148-C	Worm
1	120-B-247	453528-A	Worm Gear
1	120-A-264		Bearing
2	120-A-265		Bearing - Oilite #AA-304-2
2	120-A-266		Bearing
3	120-A-267		Bearing
2	120-A-270		Spring
30	120-A-296	452387	Ball Bearing
8	2-949-B-009		Ball Bearing
2	120-A-708		Air Pressure Switch - United Electric #4693
4	120-A-295		Drive Belt - Brown Mfg. Co. #S-10
2	120-B-307		Subassembly Flanged Down-Path Roll
10	120-B-308		Subassembly Plain Down-Path Roll
2	120-B-312		Subassembly Flanged Up-Path Roll
10	120-B-313		Subassembly Plain Up-Path Roll
16	120-A-336	452112-C	Stud - Idler
32	120-A-339	452113-A	Idler
150	120-B-340	452548-A	Stud - Rack Rolls
16	120-B-345		Screen - Rack
32	120-B-380		Bearing
56	120-B-381		Subassembly - 1" D. Rack Roll

ESTIMATE AO 65-636

ROM PRICE LIST OF RECOMMENDED SPARE PARTS FOR THE RT-12 AND RT-24 PROCESSORS

25X1

RT-12 Processor; Recommended Spare Parts (Cont'd)

<u>Quantity</u>	<u>Part No.</u>	<u>A.P.S. Part No.</u>	<u>Description</u>
150 ft.	120-A-396	457196	Ladder Chain - Rack
1	120-B-413		Subassembly Foam Covered Roll
4	120-A-426	453460	Gear
4	120-A-428		Bearing
8	120-A-429	452252	Bearing
2	120-A-431	452246	Bearing
1	120-A-437	452244	Gear
1	120-A-442	457484	Bearing
1	120-B-444		Subassembly - Deflector Roll
1	120-B-448		Master Roll
1	120-B-449		Subassembly - 1" Diameter Roll
2	120-A-454		Drive Belt
2	120-A-462		Bearing
4	120-A-469		Bearing - Oilite #A-521-1
2	120-B-481		Roll
2	120-A-510		Lamp - G.E. #30R-20
1	120-A-539		Fuse - 15 Amps - Bussman #NON-15
1	120-A-541		Fuse - 6 Amps - Bussman #NON-6
6	120-A-554		Bearing
2	120-A-555		Gear
1	120-A-556		Gear
1	120-A-557		Gear
1	120-A-560		Insert for Gear 120-A-561
1	120-A-561		Gear
28	120-A-568		Lamp - G.E. #PH-111
1	120-A-643		Heater - Chromalox #CAB-611
1	120-A-644		Filter - Make-up Air-Owen-Corning Type "C"
1	120-A-695		Bearing
8	120-A-1244		Neon Lamp - G.E. #NE-51
3	120-A-1301		Fuse - 20 Amps - Bussman #NON-20
5	120-A-1303		Fuse - 10 Amps - Bussman #NON-10
1	120-A-1332		Filter - Blower-Mine Safety Appliances #A-958
1	120-A-1453		Resistor - Ohmite #0208

ESTIMATE AO 65-636

ROM PRICE LIST OF RECOMMENDED SPARE PARTS FOR THE RT-12 AND RT-24 PROCESSORS

25X1

RT-12 Processor; Recommended Spare Parts (Cont'd)

<u>Quantity</u>	<u>Part No.</u>	<u>A.P.S. Part No.</u>	<u>Description</u>
2	120-A-707		Pump Seal - Crane #9, QP1C1

RT-24 Processor; Recommended Spare Parts

<u>Quantity</u>	<u>Part No.</u>	<u>A.P.S. Part No.</u>	<u>Description</u>
30	120-B-010	457345	Stud
50	120-A-016	457459-A	Bearing
182	120-A-018		Bearing
20	120-B-022	457463-A	Gear
14	120-A-035		Gear
8	120-A-036		Gear
24	120-A-037	452252	Bearing
14	120-A-038	452354	Bearing
12	120-A-040	453721	Bearing
5	120-A-041		Gear
7	120-B-050	452929	Special Screw
2	120-A-059		Gear
20	120-B-099	452016	Special Nut
25	120-C-114	452023	Gear
8	120-A-141	452270	Bearing
4	120-A-146	452284	Bearing
4	120-A-148	452289	Bearing
3	120-A-151		Bearing - Oilite #A-529
1	120-A-157	453609	Gear
2	120-A-168		Bearing - Oilite #FF-620-7
1	120-B-173	453627	Drive Pulley
1	120-B-187		Drive Pulley
2	120-C-188		Worm Gear
6	120-A-706	453464	Drive Pulley Assembly
3	120-A-230		Thrust Bearing - Oilite #T-710-1

ESTIMATE AO 65-636
ROM PRICE LIST OF RECOMMENDED SPARE PARTS FOR THE RT-12 AND RT-24 PROCESSORS

25X1

RT-24 Processor; Recommended Spare Parts (Cont'd)

Quantity	Part No.	A.P.S. Part No.	Description
1	120-B-246		Worm
1	120-B-247	453528-A	Worm Gear
2	120-A-264		Bearing - Oilite
2	120-A-266		Bearing
3	120-A-267		Bearing
2	120-A-268		Bearing - Oilite #T-601
2	120-A-270		Spring
2	120-A-708		Air Pressure Switch - United Electric #4693
30	120-A-296	452387	Ball Bearing
24	120-A-336	452112-C	Stud
24	120-A-339	452113-A	Idler
100	120-B-340	452548-A	Stud
24	120-B-380		Bearing
120 ft.	120-A-396	457196	Chain - Rack
2	120-A-423	458055	Friction Pin
4	120-A-426	453460	Spur Gear
4	120-A-428		Bearing
20	120-A-429	452252	Bearing
4	120-A-431	452246	Bearing
2	120-A-436	452947	Spur Gear
2	120-A-437	452244	Spur Gear
2	120-A-441	458057	Bearing Retainer
4	120-A-442	457484	Bearing
2	120-A-443	458056	Spring
6	120-B-1007		Roll Subassembly - .730" Diameter
6	120-B-1009		Roll Subassembly - 1.000" Diameter
1	120-B-1020		Subassembly Upper Pacer Roll
20	120-B-1041		Subassembly - 1" Diameter Cluster Roll
4	120-B-1043		Master Roll
1	120-B-1049		Gear Gudgeon - Short
2	120-B-1050		Gear
1	120-B-1051		Subassembly - Lower Pacer Roll

ESTIMATE AO 65-636

ROM PRICE LIST OF RECOMMENDED SPARE PARTS FOR THE RT-12 AND RT-24 PROCESSORS

25X1

RT-24 Processor; Recommended Spare Parts (Cont'd)

<u>Quantity</u>	<u>Part No.</u>	<u>A.P.S. Part No.</u>	<u>Description</u>
1	120-B-1052		Gear Gudgeon - Long
2	120-C-1057		Subassembly - Master Roll
20 ft.	120-A-1058		1/4" P. Chain and Conn. Links - Diamond #25
4 links	120-A-1058		1/4" P. Chain and Conn. Links - Diamond #25
1	1-120-D-1059		Rack Assembly and Turnaround
1	120-A-1071		Drive Gear
1	120-A-1072		Driven Gear
12	120-B-1073	457209	Screen - Rack
112	120-B-1076		Subassembly - Rack Roll
2	120-B-1085		Rack Subassembly - .980" Diameter
2	120-B-1088		Roll Subassembly - .730" Diameter
2	120-B-1089		Roll Subassembly - .730" Diameter
5	120-B-1091		Roll Subassembly - .980" Diameter
2	120-B-1113		Subassembly - Flanged Up-Path Roll
2	120-B-1116		Subassembly - Flanged Down-Path Roll
10	120-B-1117		Subassembly - Plain Up-Path Roll
10	120-B-1118		Subassembly - Plain Down-Path Roll
2	120-A-1142		Bearing
2	120-A-1152		Sleeve - Deflector Roll
2	120-A-1153		Sleeve - Rubber Covered Roll
2	120-A-1155		Spur Gear
2	120-A-1156		Spur Gear
4	120-A-1157		Drive Belt - Garlock #15-227-5
2	120-B-1159		Subassembly - Foam Covered Roll
4	120-B-1162		Subassembly - 1" Diameter Roll
2	120-B-1164		Subassembly - 3" Diameter Roll
1	120-A-1178		Clutch - General Electro-Mech. Corp. #PMC-325-1
1	120-A-1187		Timing Belt - Large - Dayton #4L490
2	120-A-1213		Bearing
2	120-A-1244		Neon Lamp - G.E. #NE-51
12	120-A-1253		Bearing
6	120-A-1301		Fuse - 20 Amps - Bussman #NON-20

ESTIMATE AO 65-636

ROM PRICE LIST OF RECOMMENDED SPARE PARTS FOR THE RT-12 AND RT-24 PROCESSORS

25X1

RT-24 Processor; Recommended Spare Parts (Cont'd)

<u>Quantity</u>	<u>Part No.</u>	<u>A.P.S. Part No.</u>	<u>Description</u>
3	120-A-1303		Fuse - 10 Amps - Bussman #NON-10
3	120-A-1304		Fuse - 30 Amps - Bussman #NON-30
4	120-A-1322		Drive Belt - BUNA-N #ARP-568-233
1	120-A-1324		Filter - Make-Up Air - Owens-Corning Type "C"
2	120-A-1332		Filter - Blower - Mine Safety Appliances #A-958
2	120-A-1372		Bearing
1	120-A-1376		Heater - Dryer - Chromalox #CAB-2511
1	120-C-1380		Master Roll
6	120-B-1384		Bearing
1	120-C-1388		Deflector Roll
1	120-A-1453		Resistor - Ohmite #O208
1	120-A-707		Pump Seal - Crane #9, QP1C1

Subtot

Subtotal ROM Price RT-12 and RT-24 Spare Parts
Engineering Support and Manufacturing Services

TOTAL ROM PRICE

25X1

25X1

September 28, 1965

APPENDIX A

SPARE PARTS LIST

A.1 FLYAWAY SPARE PARTS LIST

Listed below are the parts included in the Flyaway Spare Parts Kit supplied with the RT-12 Processor.

<u>Part No.</u>	<u>Part Description</u>	<u>Qty. Per Kit</u>
1-120-D-002	Rack Turnaround Complete	1
1-120-D-032	Rack Complete	1
1-120-D-211	Crossover Complete	1

A.2 DEPOT SPARE PARTS LIST

Parts included in this list are recommended to maintain one machine in normal operation for one year. These parts are supplied only at customer request.

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<u>Used On Assembly Drawing</u>	<u>Part No.</u>	<u>A.P.S. Part No.*</u>	<u>Part Description</u>	<u>Recommended Quantity</u>
1-120-D-002	120-B-013		Roll Assembly - 1" Diameter	25
1-120-D-211				
1-120-D-228				
1-120-D-002	120-A-016	457459-A	Bearing	64
1-120-D-211				
1-120-D-228				
1-120-D-002	120-B-022	457463-A	Gear - 3" Diameter Roll	20
1-120-D-211				
1-120-D-228				
1-120-D-002	120-C-026		Subassembly - 3" Diameter Roll	3
1-120-E-033	120-A-035		Gear	10
1-120-E-200				
1-120-E-033	120-A-036		Gear	2
1-120-E-033	120-A-037	452252	Bearing	24
1-120-E-033	120-A-038	452354	Bearing	14
1-120-E-033	120-A-040	453721	Bearing	12
1-120-E-033	120-A-041		Gear	2
1-120-E-033	120-B-047	453742	Roll Assembly - .980" Diameter	1
1-120-E-033	120-B-050	452929	Special Screw	7
1-120-E-033	120-B-051	453739	Roll Assembly - .730" Diameter	1
1-120-E-033	120-B-052	453452	Roll Assembly - .730" Diameter	2

* Numbers listed in this column can be used to order replacement parts from Apparatus Parts Service,

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<u>Used On Assembly Drawing</u>	<u>Part No.</u>	<u>A.P.S. Part No.*</u>	<u>Part Description</u>	<u>Recommended Quantity</u>
1-120-E-033	120-B-054	453551	Roll Assembly - .980" Diameter	3
1-120-E-033	120-B-058	453738	Roll Assembly - .730" Diameter	1
1-120-E-033	120-A-059		Gear	1
1-120-E-060	120-A-063	454418	Bearing	17
1-120-E-060	120-A-068		Bearing	2
1-120-E-060	120-A-070		Gear	1
1-120-E-060	120-A-073	452215	Bearing	2
1-120-E-060	120-B-089		Subassembly - 1" Diameter Roll	1
1-120-E-060	120-B-090		Subassembly - Grooved Roll	1
1-120-E-060	120-B-092		Gear	2
1-120-E-060	120-B-095		Gear	1
1-120-D-211	120-B-099	452016	Special Nut	30
1-120-D-228				
1-120-E-536				
1-120-E-060	120-B-100		Gear	1
1-120-E-060	120-C-109		Master Roll	1
1-120-E-060	120-C-110		Roll	2
1-120-D-032	120-C-114	452023	Drive Gear	10
1-120-E-060				
1-120-D-211				
1-120-D-228				
1-120-E-536				

* Numbers listed in this column can be used to order replacement parts from Apparatus Parts Service,

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<u>Used On Assembly Drawing</u>	<u>Part No.</u>	<u>A.P.S. Part No.*</u>	<u>Part Description</u>	<u>Recommended Quantity</u>
1-120-E-138	120-A-141	452270	Bearing	16
1-120-E-138	120-A-146	452284	Bearing	4
1-120-E-138	120-A-148	452289	Bearing	4
1-120-E-138	120-A-151		Bearing	2
1-120-E-138	120-A-155	453607	Gear	1
1-120-E-138	120-A-157	453609	Gear	1
1-120-E-138	120-A-165	453620	1/4" P. Chain and Conn. Link	1
1-120-E-138	120-A-166		1/4" P. Chain and Conn. Link	1
1-120-E-138	120-A-168		Bearing	2
1-120-E-138	120-B-173	453627	Drive Pulley - Small	1
1-120-E-060	120-C-183		Drive Gear	1
1-120-E-060	120-C-184	454428	Master Gear	1
1-120-E-138	120-B-187		Drive Pulley	1
1-120-D-032	120-C-188		Worm Gear	18
1-120-E-138				
1-120-E-200	120-B-190	453463	Pulley	6
1-120-E-200	120-A-192	453465	Bearing	12
1-120-E-200	120-B-197	455616	Roll Assembly - 1" Diameter	6
1-120-D-211	120-B-217		Roll Assembly - 3" Diameter	4
1-120-D-228				
1-120-E-536				

* Numbers listed in this column can be used to order replacement parts from Apparatus Parts Service, [redacted]

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21-2 25X1

Approved For Release 2005/02/17 : CIA-RDP78B04770A001100030005-3

<u>Used On Assembly Drawing</u>	<u>Part No.</u>	<u>A.P.S. Part No.*</u>	<u>Part Description</u>	<u>Recommended Quantity</u>
1-120-E-276	120-A-230		Bearing	3
1-129-E-276	120-B-246	452148-C	Worm	1
1-120-E-276	120-B-247	453528-A	Worm Gear	1
1-120-E-276	120-A-264		Bearing	1
1-120-E-276	120-A-265		Bearing	2
1-120-E-276	120-A-266		Bearing	2
1-120-E-276	120-A-267		Bearing	3
1-120-E-276	120-A-270		Spring	2
1-120-E-288	120-A-296	452387	Ball Bearing	30
1-120-E-031	2-949-B-009		Ball Bearing	8
1-120-E-276	120-A-287		Air Pressure Switch	2
1-120-E-288	120-A-297		Drive Belt	4
1-120-E-288	120-B-307		Subassembly Flanged Down-Path Roll	2
1-120-E-288	120-B-308		Subassembly Plain Down-Path Roll	10
1-120-E-288	120-B-312		Subassembly Flanged Up-Path Roll	2
1-120-E-288	120-B-313		Subassembly Plain Up-Path Roll	10
1-120-D-032	120-A-336	452112-C	Stud - Idler	16
1-120-D-032	120-A-339	452113-A	Idler	32
1-120-D-032	120-B-340	452548-A	Stud - Rack Rolls	150
1-120-D-032	120-B-345		Screen - Rack	16
1-120-D-032	120-F-380		Bearing	32
1-120-D-032	120-B-381		Subassembly - 1" D. Rack Roll	56

* Numbers listed in this column can be used to order replacement parts from Apparatus Parts Service, [REDACTED]

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RT-12 25X1

Approved For Release 2005/02/17 : CIA-RDP78B04770A001100030005-3

<u>Used On Assembly Drawing</u>	<u>Part No.</u>	<u>A.P.S. Part No.*</u>	<u>Part Description</u>	<u>Recommended Quantity</u>
1-120-D-032	120-A-396	457196	Ladder Chain - Rack	150 Ft.
1-120-D-210	120-B-413		Subassembly Foam Covered Roll	1
1-120-D-210	120-A-426	453460	Gear	4
1-120-D-210	120-A-428		Bearing	4
1-120-D-210	120-A-429	452252	Bearing	8
1-120-D-210	120-A-431	452246	Bearing	2
1-120-D-210	120-A-437	452244	Gear	1
1-120-D-210	120-A-442	457484	Bearing	1
1-120-D-210	120-B-444		Subassembly - Deflector Roll	1
1-120-D-210	120-B-448		Master Roll	1
1-120-D-210	120-B-449		Subassembly - 1" Diameter Roll	1
1-120-D-210	120-A-454		Drive Belt	2
1-120-E-455	120-A-462		Bearing	2
1-120-E-455	120-A-469		Bearing	4
1-120-E-455	120-B-481		Roll	2
1-120-E-403	120-A-510		Lamp	2
1-120-E-537	120-A-539		Fuse - 15 Amps	1
1-120-E-537	120-A-541		Fuse - 6 Amps	1
1-120-E-536	120-A-554		Bearing	6
1-120-E-536	120-A-555		Gear	2
1-120-E-536	120-A-556		Gear	1

* Numbers listed in this column can be used to order replacement parts from Apparatus Parts Service,

Approved For Release 2005/02/17 : CIA-RDP78B04770A001100030005-3

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RT-12

Approved For Release 2005/02/17 : CIA-RDP78B04770A001100030005-3

<u>Used On Assembly Drawing</u>	<u>Part No.</u>	<u>A.P.S. Part No.*</u>	<u>Part Description</u>	<u>Recommended Quantity</u>
1-120-E-536	120-A-557		Gear	1
1-120-E-536	120-A-560		Insert for Gear 120-A-561	1
1-120-E-536	120-A-561		Gear	1
1-120-E-564	120-A-568		Lamp	28
1-120-E-625	120-A-643		Heater	1
1-120-E-625	120-A-644		Filter - Make-Up Air	1
1-120-E-455	120-A-695		Bearing	1
1-120-E-009	120-A-1244		Neon Lamp	8
1-120-E-537	120-A-1301		Fuse - 20 Amps	3
1-120-E-537	120-A-1303		Fuse - 10 Amps	5
1-120-E-403	120-A-1332		Filter - Blower	1
1-120-E-537	120-A-1453		Resistor	1

* Numbers listed in this column can be used to order replacement parts from
Apparatus Parts Service

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APPENDIX B

ELECTRICAL DRAWINGS

Four drawings are included in this appendix for reference concerning electrical operation or maintenance problems. They are inserted in the following order:

Schematic Diagram, 12" Reversal Processor, No. 120-D-506

Sub-Assembly of Inner Air Plenum and Electrical Components,

No. 120-D-507A

Heater Assembly, RT-12 Processor, No. 1-120-C-567

General Wiring Assembly, 12" Roll Processor, 1-120-E-690

AL-46-800694- /

5 October 1966

Dear Boyd:


25X1 We are forwarding herewith revised pages to be inserted in the Operating Instructions Manual for the Roller Transport Reversal Processor, 12-Inch, AL-45-700085, transmitted to you 3 December 1965, AL-45-800227.

The changes are as follows:

<u>PAGE</u>	<u>DESCRIPTION</u>
A-5	Shows change in nomenclature of Part 120-B-381
A-7	Shows addition of Part 120-B-709

The enclosed drawings, 1-120-D-032, Revision B, reflects the above mentioned changes.

RRW:eb


R. R. W.

Copy #1: BN w/encs. (AL-45-700085-1, 2, 3 Page A-5)
(AL-45-700085-1, 2, 3 Page A-7)
(Drawing 1-120-D-032 (U) 3 Copies)

SECRET

31 Aug 66

PAR	Title	Status
221	Lens Bench Manual	Not to be submitted
222	Auto Stereo Regstrn System	Completed 3 Mar 65
223	Monochr. Lens System	Disapproved
225	Micro-D Training Program	Terminated
226	Edge Trace Meas., Micro-D	Completed
227	Color Viewer	Disapproved
228	Vectograph Study	Not to be submitted
229	Optical Design Film Viewer	Not to be submitted
230	10X Color Lens	Disapproved
231	10-20-40X Color Lamphouse	Disapproved
232	Automated Edge Trace Device	Disapproved
233	Zoom (6X to 60X) Projection Lens	Terminated/TWX 7878 dtd 26 Jul 66
234	MTF Exposure Device	Disapproved
235	Automation Program Study	Disapproved
236	Film Disposal Rewind Unit	Disapproved
237	Briefing Aids	Completed 25 Jul 65
238	Equipment Installation	Closed/TWX 7284 dtd 23 May 66
239	Administration	Closed
240	Not Assigned	-
241	Not Assigned	-
242A	Color Demonstration Material	Completed 29 Mar 66
243A	Briefing Print Enlarger	Active
244	Spare Parts for RT Processors	Approved/TWX 8078 dtd 11 Aug 66
245	BPE High Magnification Lens Sets	Approved/TWX 7391 dtd 6 Jun 66

SECRET

SECRET

3

OUT 59413

25X1
25X1 SECRET 011012Z CITE

[REDACTED]

[REDACTED]

011012Z CITE

25X1

REFER TO YOUR LETTER AL-45-8001204, 12 OCT 1965 RECOMMENDING
GRADE PARTS LIST FOR RT-12 AND RT-24 PROCESSORS. PAR-244, GRADE
PARTS FOR RT PROCESSORS UNDER CONTRACT [REDACTED] IS APPROVED FOR

25X1

[REDACTED] EXCEPT FOR ITEMS NUMBERED 120-B-015 AND 120-B-301.
EXPEDITED DELIVERY OF AVAILABLE PARTS AS SOON AS POSSIBLE WITH INDIA
NOT TO FOLLOW WHEN OBTAINABLE. DO NOT SEND PARTS FOR DRUM DRIVE
ASSEMBLY OF RT-24.

SECRET

/END OF MESSAGE/

3

SECRET

GROUP 1
Excluded from automatic
downgrading and

In house
Alterations to RT-12

1. The 3 inch diameter rollers in the wet-to-dry (squeezed) processor were transporting 1 inch in 24" more film than was released from the wet tank. This created too much strain on the drive gears of this unit resulting in stripping the teeth from the weakest gear. This was corrected by turning the two 3 inch rollers to 2.875 inches.
2. There is approximately 3 inches of space between the last

and the first roller of the dry cabinet. In the case of curled film or even canted film this space is too great resulting in film colliding with the dry box roller or even passing on the wrong side ^{of the roller} resulting in film jams in the dry cabinet. This was corrected by inserting a 1 inch diameter roller between the two existing rollers, a plexiglass cover was also installed on the top of the dry cabinet; This serves two

and loss of material in production can be minimized through salvage, next the plexiglass was made short enough to permit removal without opening trap door to machine dark room

3. The top crossover in the dry cabinet was held in place by gravity; because of the overdrive condition in this unit the driven gear in this unit tended to ride high or slightly out of mate with the drive gear. This condition was

corrected by installing springs

3

on the crossover to hold it
down in correct position;
should a jam occur in the
unit the springs would release
the unit before damage to
gears would occur.

work performed by [] team ^{25X1}

[] on week

of 13-16 Mar. 67 : RT-12

a. Remove pump and
install new pump seal.

b. Check all racks for
loose rollers and proper
alignment of bottom turn-
around.

c. Replace roller in
bottom turn-around.

d. Tighten drive chains
in all racks.

e. Replace chain idler
studs on one rack.

2

f. Adjust air nozzle
on hopperishment sensor.

g. Supply and install exit
guide.

h. Remove both belt drive
pulleys in dryer, replacing
one of them with spare

Pulley for RT-24 to obtain
a better speed ratio between
crossover and belt drive

i. checked speed ratios
in dryer, it was found to have
an over drive of 3% should
have been ^{not over} 1%.

3

J checked cut sheets through all racks for any evidence of film earthing and corrected.

K. Checked re-exposure cross over exposure station for free movement of cut film.

L. Processed several hundred feet of 9.5" flaked film to check mechanical operation of machine (OK).

M. Recommended enlarging air ports in roll film feed

work yet remaining before
turning over for navy
project.

25X1

(a) took measurement
of new drive pulley in dryer
and will advise as to proper
dimension of roller in exit,
it may have to be turned down.

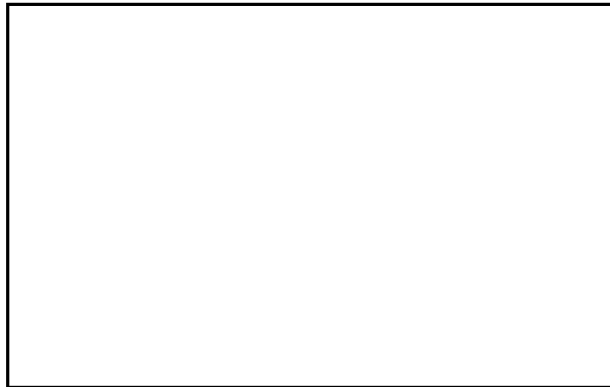
b. All crossovers should be
cleaned.

c. Rollers in the exposure
station crossover should be
cleaned.

d. Plumbing should be installed

PH 297

**OPERATING INSTRUCTIONS
FOR THE
ROLLER TRANSPORT
PAPER PROCESSOR, 24-INCH
(No. 1-120-E-1000)**



25X1

October 1965

RT-24

DATA SHEET

Capabilities

Product Type: Black-and-white standard and treated base, single and double weight papers. Leader tabs, made from cut sheet film, must be taped to the leading edge of each print.

Sizes: 4 x 5 minimum through
20 x 24 maximum

Dimensions

Length: 10 feet, 11 inches
Width: 5 feet
Height: 7 feet, 8 inches

Weight

7000 pounds installed, empty

Power Requirements

220/208 volts, 100 amperes, 60 cycles,
AC, 3-phase

Water Requirements

Hot: 130F \pm 10F
Chilled: 50F \pm 5F
Pressure: 30 psig minimum

Air

25 psig instrument air

Drain Requirements

30 GPM maximum

Air Exhaust Requirements

400 CFM maximum

RT-24

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RT-24

SECTION 1

INTRODUCTION AND DESCRIPTION

1.1 PURPOSE

The Roller Transport Paper Processor, 24-Inch, (RT-24) fulfills a requirement for the rapid processing of large black-and-white paper prints. In fact the RT-24 can process prints in standard sizes ranging from a minimum length of 4 inches and a maximum width of 24 inches. Darkroom operation at the feeding station and processing tank section is mandatory; however, a light shield at the intersection of the tank and dryer sections allows removal of the processed prints under white lights.

Temperatures, replenishment, and recirculation of the processing solutions are controlled on a solution control panel which is attached directly to the rear side of the processor. An added versatility is provided by the auxiliary drum dryer which is supplied with the processor and used to produce glossy prints.

Various components of the processor are identified in the schematic in Figure 1.

1.2 MACHINE DESCRIPTION

1.2.1 Frame and Panel Construction

The RT-24 Processor consists of three main sections: the feed stand, the processing tank section, and the dryer section. Construction of the frames and panels for all three sections is identical. Frames are welded

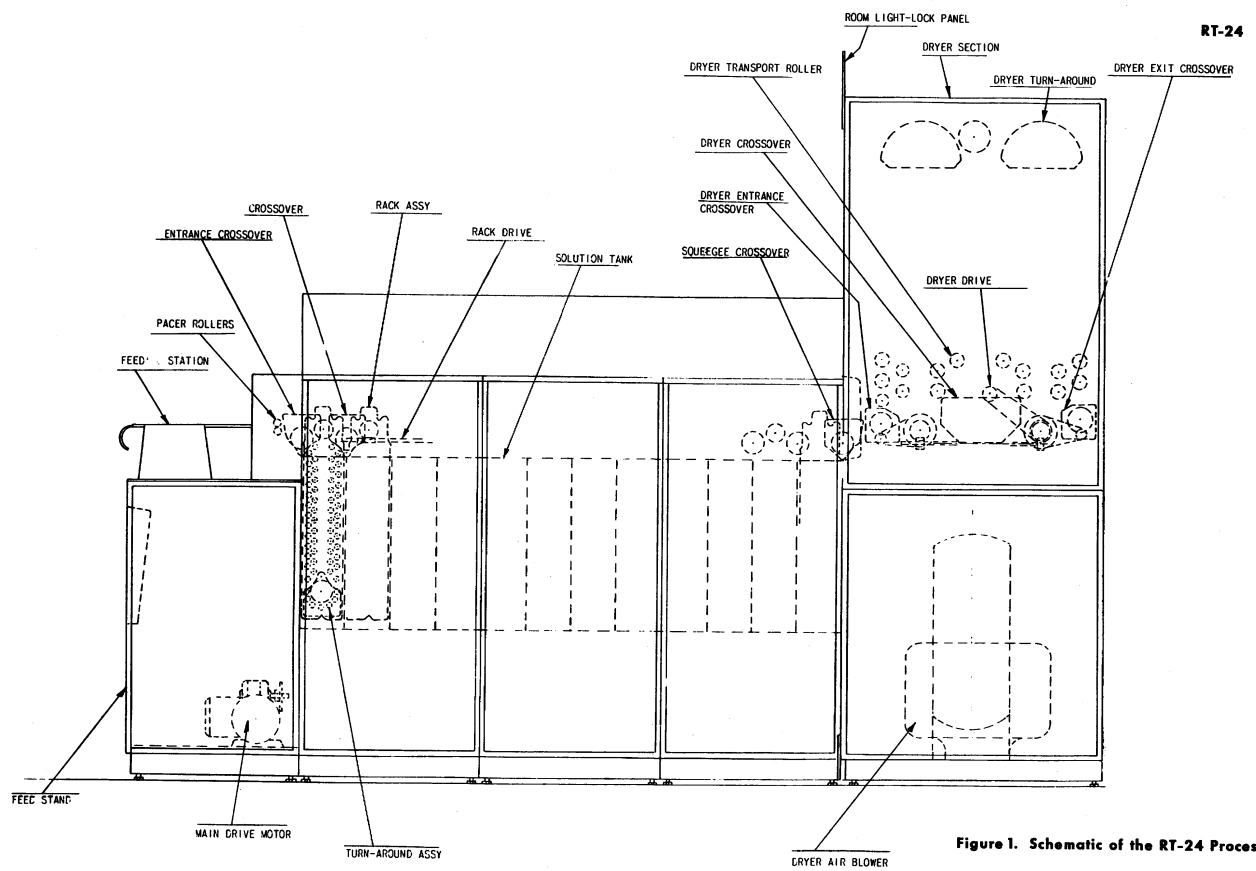


Figure 1. Schematic of the RT-24 Processor

RT-24

from right-angle stainless steel. The top and side panels are built of honey-comb aluminum sandwiched between two sheets of aluminum. Both sides of every panel are then covered with vinyl: one side with a solid beige color; the other with a walnut grain. Thus the panels are lightweight and are easily removed for inspection and operational purposes.

The frame members are finished with baked enamel which is easy to wipe clean and is not affected by processing chemicals. The same properties are true for the vinyl surfaces on the panels.

1.2.2 Feed Stand

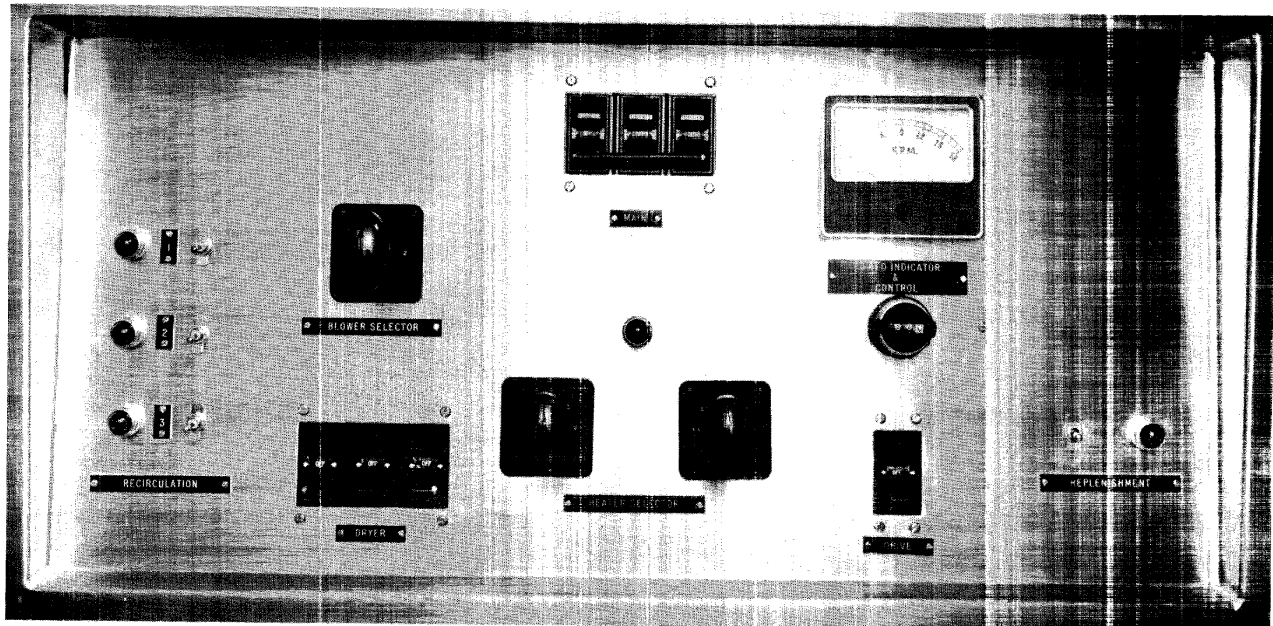
The feed stand is a cabinet divided into upper and lower halves. The upper half contains the electrical control panel and associated wiring; the lower half houses the main drive assembly.

Standing on two brackets about seven inches above the top of the feed stand is the feeding station entrance guide which is level with the feed slot. Product is placed on this guide and fed into the processor.

There are leveling screws under each corner of the feed stand that can be adjusted to level the stand and align it with the processing tank section.

1.2.3 Electrical Control Panel

The panel is shown in Figure 2. Following is a description of each control and indicator on this panel:



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Figure 2. Electrical Control Panel

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- a. MAIN. This control is used as the primary electrical switch for the processor; it must be turned ON before any other electrical control will function. The control is a 100-amp circuit breaker to protect the processor circuits. Further, it is rated to operate at 220 volts ac, 60 cycle, 3 phase.
- b. BLOWER SELECTOR. There are four positions 1, 2, 3, and 4 on this switch which is used to control the speed of the dryer blower motor. At position 1 the motor turns at 600 rpm; at 2, 900 rpm; at 3, 1200 rpm; and at 4, 1800 rpm. A stop is built in the switch that prevents it being turned directly from position 4 to 1. The switch must be reversed through positions 3 and 2 to 1.
- c. SPEED INDICATOR. The rate of film traveling through the processor is indicated on this tachometer in feet per minute. The instrument is coupled to transistorized speed control that is part of the main drive motor.
- d. SPEED CONTROL. This micropotentiometer is used to adjust the speed of the main drive motor. Although its dial shows space for three digits, the control is limited to only a 340-degree turn and indicates numerals from 0 to 87. The numerals can be referenced to machine speed in feet per minute. The control is connected to the same transistorized device on the main drive motor as the tachometer.

NOTE

Machine speed should be returned to "0"
before turning OFF the DRIVE or MAIN switches.

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- e. DRIVE Switch. The ON-OFF control for the main drive motor.
- f. REPLENISHMENT Switch. The electrical portion of the pneumatic-electrical replenishment system is energized with this switch. An associated pilot light behind a safelight jewel glows when the switch is turned ON. See Section 1.2.8 for an explanation of the replenishment system.
- g. HEATER SELECTORS. These two selector switches are used to control the number of heating elements in operation inside the dryer cabinet. The left control is used to energize up to six (plus a thermostatic-controlled) heater elements while both controls are used to energize seven through twelve heater elements. A pilot light, centered above and between the two switches, glows when a single heater element, which cycles on or off as necessary to control temperature, is energized. See Section 1.2.11 for a description of dryer operation.
- h. DRYER. This control is an 100-amp circuit breaker similar to the control used as the MAIN switch. It must be turned ON before either the dryer blower motor or heating elements can be energized by their respective selector switches.
- i. RECIRCULATION. The three controls are used to energize the pump motors to recirculate the chemical solutions used in the first five tanks in the processor tank section. No. 1 energizes the pump for developer and this solution recirculates through tanks 1 and 2. No. 2 energizes the first fixer pump which recirculates the solution through tank 3 or through tanks 3 and 4 depending on the piping arrangement. No. 3 energizes the pump that recirculates fixer two solution through tanks 4 and 5, or 5 only, depending on the piping arrangement. Each of the three controls has a pilot light that glows when its control is ON. The controls are 7.5-amp circuit breakers to protect the pump motor circuits.

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1.2.4 Main Drive System

The transport system is driven by a 3/4-horsepower variable-speed motor located in a compartment in the bottom of the feed stand. One chain powers the horizontal main drive shaft which drives the entire roller transport system in both the processing and the drying sections.

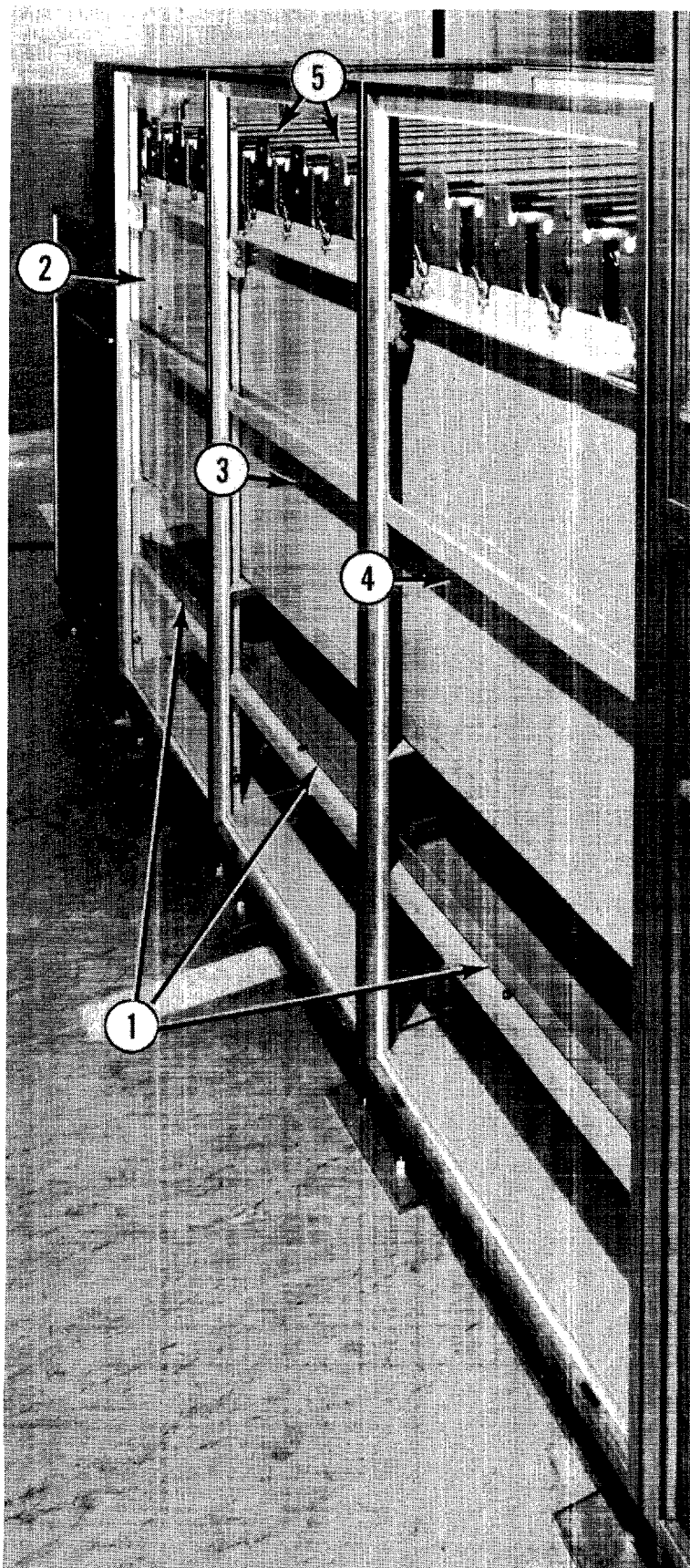
The roller racks take their drive from a series of worm gears mounted on the main drive shaft. The dryer also is driven by means of two worm gears mounted on the main drive shaft. These worm gears operate two pulleys which drive two endless belts.

The pacer roller assembly consists of two stainless-steel rollers which derive their power from the main drive shaft by means of a chain.

1.2.5 Processing Tank Section

This section, often referred to as the wet section of the processor, contains 12 tanks made of three four-tank modules. During processing, tanks 1 and 2 contain developer, tanks 3, 4, and 5 contain the fixer solutions (see Section 1.2.3, item i.), and tanks 6 through 12 contain wash water. Tank 8 can be used to hold hypo clearing agent if desired.

Each four-tank module comprises, besides the tanks, a plastic catch pan and drain, a section of the rack drive assembly, and the frame to which these components are attached. A view of the tank section is shown in Figure 3. In operation, each tank contains a rack, turnaround, and cross-over plus the pertinent solution. There are leveling-screw pads under each corner of a tank module so it can be aligned with the preceding and following portions of the processor during machine installation.



1. Catch Pans
2. Tanks Nos. 1 through 4
3. Tanks Nos. 5 through 8
4. Tanks Nos. 9 through 12
5. Crossover and Rack Assemblies

**Figure 3. Processing Section
with Panels Removed**

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Tank capacity is about 44 liters with a rack in place, depending on the position of the overflow weirs. Each tank is formed from sheets of stainless steel and then welded together.

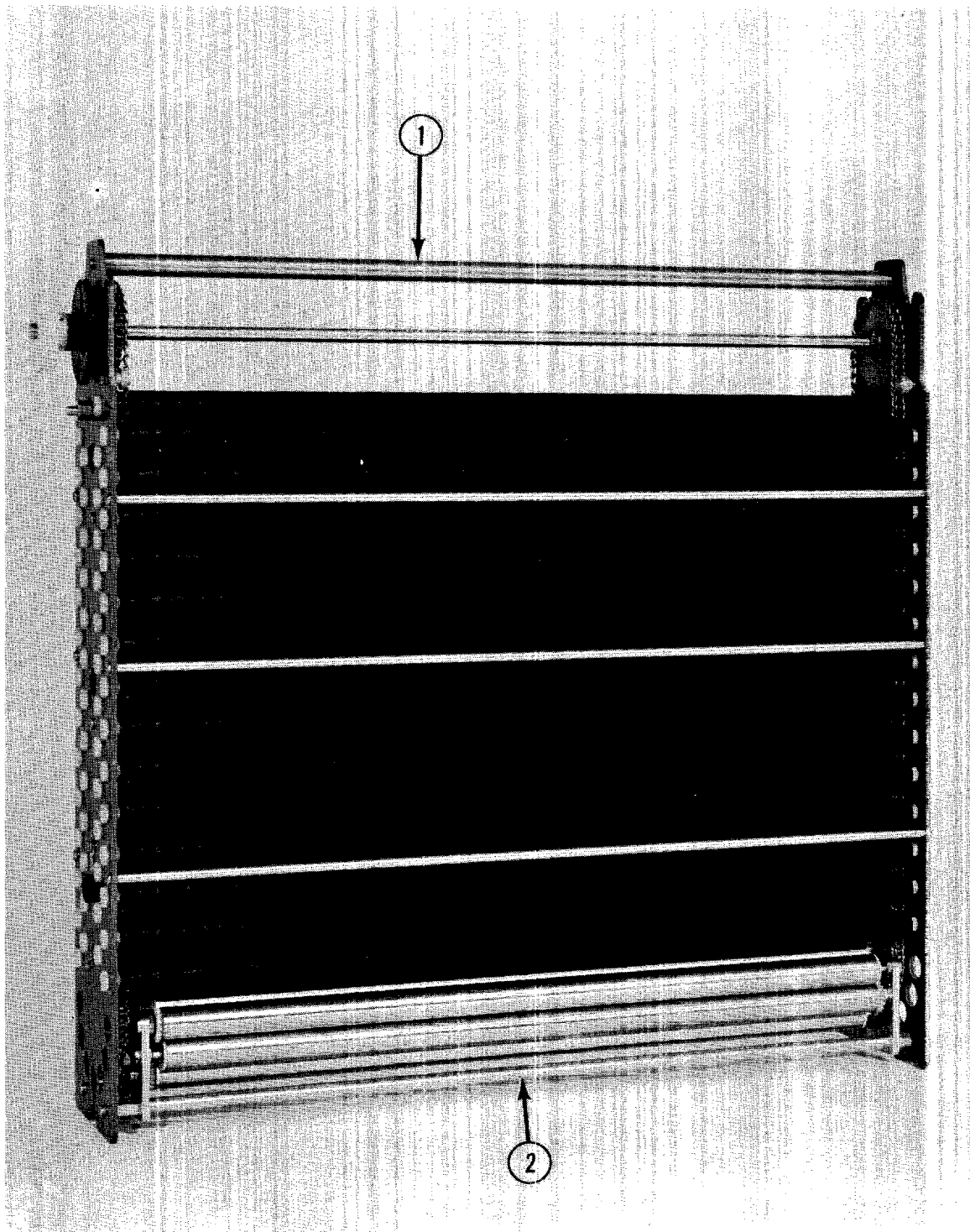
1.2.6 Roller Transport System

The complete roller transport system consists of 12 racks (two for the developer tanks, three for the fixer tanks and seven for the wash tanks), and 13 crossovers, including squeegee crossover, in the processing section.

1.2.6.1 Rack Assemblies. The transport in each rack (see Figure 4) consists of chain-driven rollers mounted in a slightly staggered path. As the rollers rotate, the product is conveyed from roller to roller throughout the system.

1.2.6.2 Turnaround Assemblies. The rollers are mounted in vertical rows in the racks. When the product reaches the bottom of each rack, it must be turned 180 degrees in order to climb upward to complete its course through the rack. To make this change in direction, a turnaround assembly (Figure 4) is mounted at the bottom of each rack. The turnaround assembly consists of a 3-inch diameter roller assembly called the master roller, around which are mounted seven smaller roller assemblies called cluster rollers. The cluster rollers, spaced around the master roller, guide the product around the master roller and at the same time continue to transport the product upward into the vertical path of staggered rollers of the rack. The cluster rollers are driven by means of a gear on each end of the master roller. The master roller is chain driven.

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1. Roller Rack
2. Turnaround

Figure 4. Roller Rack and Turnaround Assemblies

1.2.6.3 Crossover Assemblies. As the product reaches the top of the rack it enters the crossover assembly (similar in design to the turnaround assembly), which conveys it to the downward vertical path of the next rack. There are 13 crossover assemblies: one for the entrance to the first rack, one between each pair of the 12 racks, and one which incorporates a squeegee roller at the exit of the last rack. All, except the entrance and exit units, are identical to the one pictured in Figure 5.

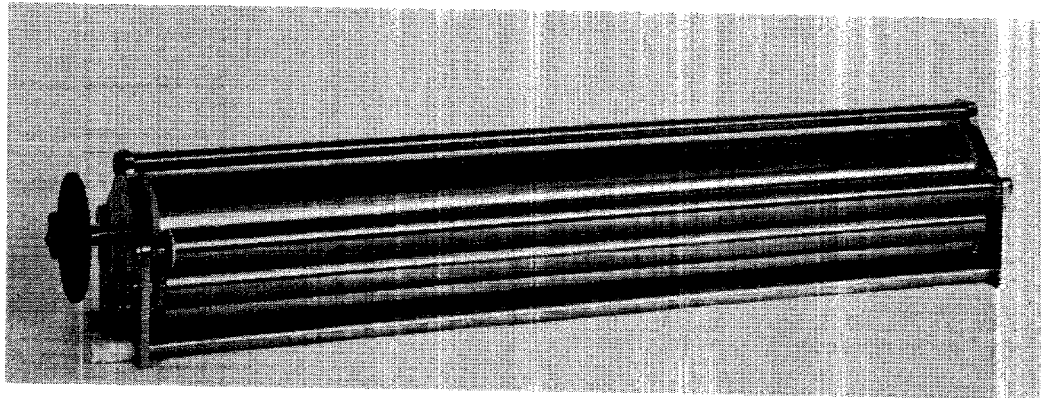


Figure 5. Crossover Assembly

1.2.7 Solution Control Panel

This panel contains various controls for metering, directing flow, tempering, and draining the solutions used in the processor. Behind the face of the panel is a cabinet enclosing the piping, pumps, filters, heat exchangers, valves, and a mixing tee for the solution system. The panel and cabinet are referred to as the solution control panel assembly. This assembly stands against the rear side of the wet tank section of the processor. The face of the panel is depicted in Figure 6.

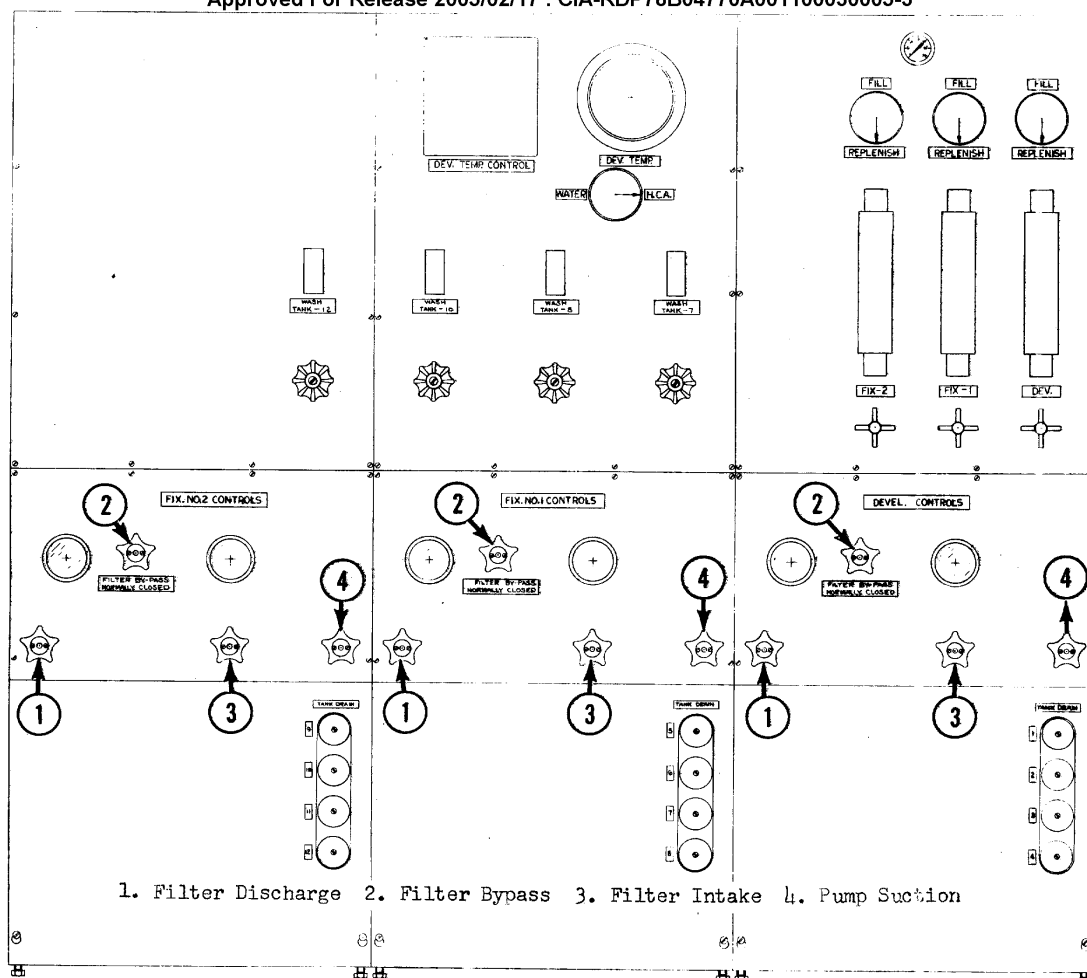


Figure 6. Solution Control Panel

Those controls on the face of the panel are described below:

- a. Directional Control Valve. The developer, first fixer, and second fixer each has one of these valves. The valves are set on FILL to bypass the flow meters during the initial filling of the tanks, or they are positioned on REPLENISH during processor operation so that solution can flow through the flow meter for replenishment.

A fourth valve can be positioned to divert either wash water or hypo clearing agent to tank 8. It has two positions labeled WATER and H.C.A.

- b. Flow Meter. Flow meters are used for developer (labeled DEV), the first fixer (FIX-1), and the second fixer (FIX-2). These units are rated for a maximum flow of 1100 cc per minute and the desired flow is specified as a percentage of this figure.

Four Ratostites are employed to indicate the flow of water into the wash section. The Ratostites have a maximum capacity of four gallons per minute and are calibrated in gallons per minute.

The four Ratostite flow meters are labeled WASH TANK-7, WASH TANK-8, WASH TANK-10, and WASH TANK-12. See Section 1.2.10, Water Circulation System.

- c. Solution Metering Valves. Below each flow meter (there are seven) is a valve that is turned clockwise to decrease or counterclockwise to increase flow. The valves for developer and the two fixer solutions are needle valves and are used for metering only. They must not be used for shutoff. The controls for the four wash lines are globe valves.

- d. Temperature Controller. An indicating controller labeled DEV. TEMP. CONTROL automatically maintains solution temperature by adjusting the flow of hot (120F) or chilled (55F) water through a mixing tee. Each line, hot and cold water, has an air-operated valve which opens or closes to control water flow as directed by the indicating controller. These valves close if air pressure fails. Air pressure is necessary for both valves to open and for the temperature control system to operate. Hence, the air system must be turned on and 25 ± 5 psi of air must be available for processor operation. From the mixing tee, tempered water flows through the shell sides of three heat exchangers connected in series. The first heat exchanger has developer flowing through its tube side, the second has the first fixer, and the third has the second fixer. From the last heat exchanger, water flows through the four wash Ratosites and on to the respective wash tanks.

The controller senses water temperature from a sensor located in the line between the mixing tee and the inlet to developer heat exchanger. If the controller senses a change, it causes the pneuematically-operated valves in the hot and chilled water lines to open or close as required.

- e. Temperature Gage. This thermometer indicates developer temperature and is so labeled, DEV. TEMP. The six-inch diameter face and the white numerals and scale on the black background make it easy to read this instrument with a hand-held safelight.

- f. Filter Pressure Gages. The filters for developer, first fixer, and second fixer solutions are located behind the face of the panel. Each of the three filters has two pressure gages, one on each side of the filter housing, that are checked periodically for pressure drop across the filter to determine if the filter cartridges need changing (see Section 4.7, Changing Filter Cartridges).
- g. Pump Suction Valves. These valves are identified in Figure 6 as item 4. The valves are opened to expedite draining their respective recirculation systems.
- h. Filter Control Valves. There are three valves for each recirculation system filter. In addition to being called out in Figure 6, the valves are represented in the schematic in Figure 7, and they are described below:
 - (1) Intake: (Item 3 in Figure 6.) The valve in the line between the filter and pump discharge. It is closed while changing filter cartridge.
 - (2) Bypass: (Item 2 in Figure 6.) This valve is labeled FILTER BYPASS NORMALLY CLOSED and it is in the line bypassing the filter. Should it be necessary to change a filter cartridge while its recirculation system continues operation, this valve is opened to allow solution flow around the filter installation.
 - (3) Discharge: (Item 1 in Figure 6.) The valve located in the line downstream of the filter. It is closed while changing a filter cartridge.

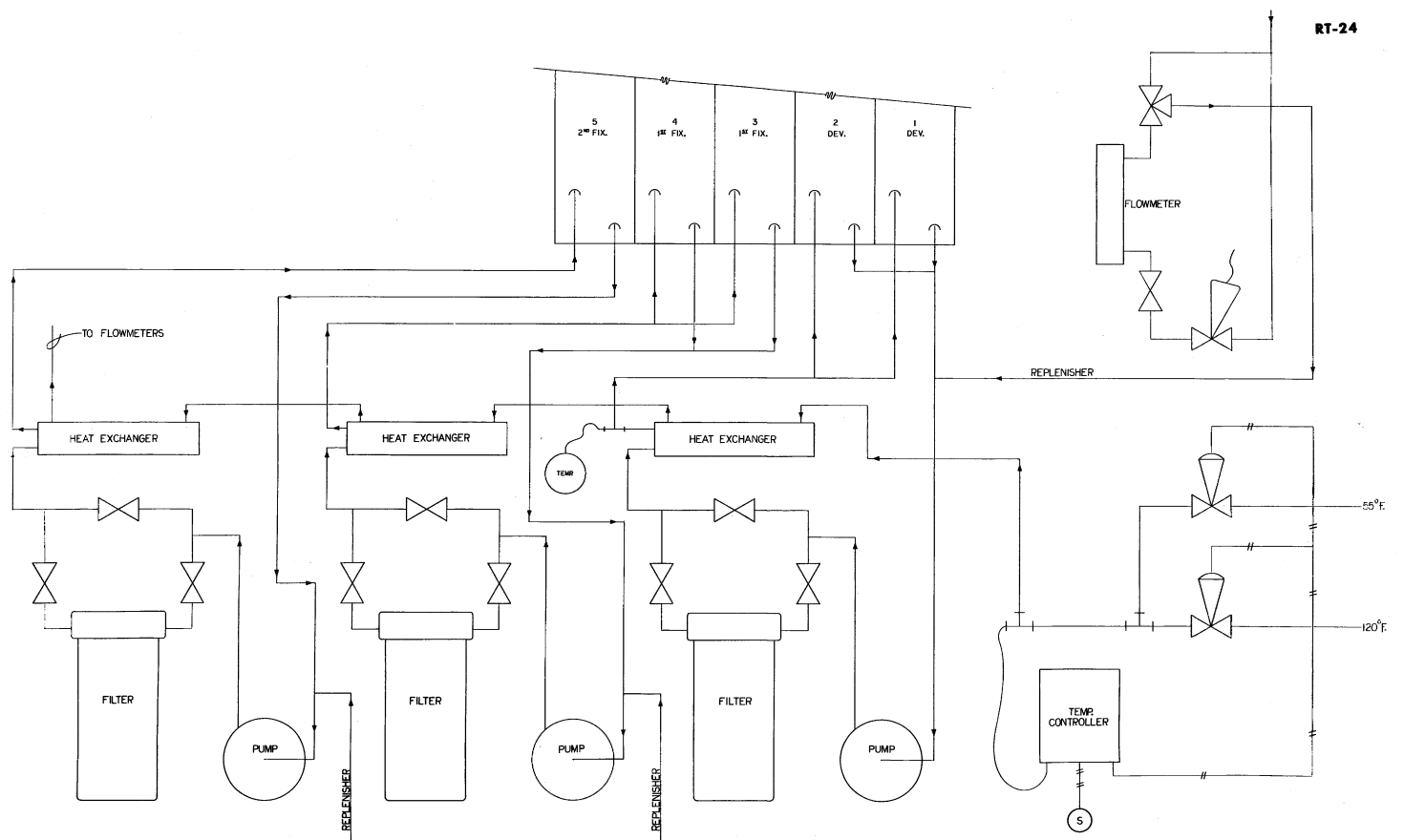


Figure 7. Recirculation Systems

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1. Drain Valves. The four valves arranged in each of three vertical rows on the bottom of the solution control panel are opened to drain the 12 tanks. Each row is labeled TANK DRAIN and the valves are numbered from 1 through 12, respectively, to indicate which tank is emptied when that valve is opened. The three bottom panels, each of which contains four drain valves, can be easily removed for access to the filter housings, etc.
- j. Air Pressure Gage. This gage indicates the air pressure necessary to operate the replenishment systems for the developer and the two fixer solutions. Air pressure in this system is adjusted by a regulator valve on top of the solution control panel cabinet. The valve is located over the air pressure gage. It should be set at 1 1/2 psi, maximum. Furthermore, this valve must not be used to turn the air on or off. Instead, use the control valve in the line from the building air system. The solution replenishment system is described in Section 1.2.8.

1.2.8 Replenishment System

A pneumatic-electrical system is employed to balance solution replenishment with the amount of product being processed. The three solutions (developer, fixer one, and fixer two) are replenished through their respective flow meters at the prescribed flow rate and with fresh solution each time a piece of paper is fed into the machine.

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Two air pressure switches located in the path of the product between the pacer rollers and feed slot trigger the replenishment cycle. One air pressure switch is centered in relation to the length of the feed slot and the other switch is near the right end of the slot. Neither switch will operate unless the air stream directed against its orifice is interrupted. This air is delivered at a pressure of 1 1/2 psi from the regulator and pressure gage on the solution control panel (see Section 1.2.7, item j.). When a piece of paper is fed into the processor it interrupts the air flow in one or both pressure switches. This action causes the switch(es) to energize a solenoid valve that opens an air pressure line leading from the building air supply to three pneumatically-operated diaphragm valves which open valves in the solution lines for developer and the two fixers. Solutions then flow through the respective flow meters and through lines leading to the suction side of each recirculation pump to furnish replenishment.

The solenoid valve in the building air supply line will remain open five seconds after the last piece of product is fed into the machine. When this valve closes, air pressure to the pneumatic valves is shut off and they return to the closed position.

1.2.9 Recirculation Systems

Recirculation continually agitates solution against the surface of the product. Motor driven pumps recirculate developer and both fixer solutions; wash water is not recirculated. It drains to sewer after circulating through the processor.

The three systems, one for developer and one for each fixer solution, are identical. All are shown schematically in Figure 7. In the

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developer recirculation system, the solution returns from the first and second tanks in separate lines which join a single line to pump suction. The pump forces the solution through a filter and through the tube side of a heat exchanger for temperature control. After leaving the heat exchanger, the solution flows to a header from which it flows to the first and second tanks. The developer solution recirculates at the rate of six gallons per minute.

The first and second fixer systems are identical to the developer system. However, since developer temperature is more acute than the temperature of either fixer solutions, water flows through the shell of the heat exchanger for developer before it flows through the heat exchangers for fixer 1 and fixer 2. Also, a temperature sensing element for the developer is installed downstream of the developer heat exchanger in the developer line. This element is connected to the developer temperature gage on the solution control panel.

1.2.10 Water Circulation System

As explained in item d., Section 1.2.7, Solution Control Panel, tempered water flows through the shell sides of the three heat exchangers to the control valves and flow meters for tanks 6 through 12. There are four flow meters (Ratosites) and control valves which have the following labels and purpose:

- a. WASH TANK-7. This flow meter and valve regulate flow of water to tanks 7 and 6. Water flows into 7, to 6, and to sewer.

- b. WASH TANK-8. The valve and flow meter control water flow to tank 8 only. This tank can be used for hypo clearing agent (H.C.A.) if desired. Note that when H.C.A. is used in tank 8, the control valve and flow meter are bypassed and the rate of flow of H.C.A. solution depends on the valve(s) on the H.C.A. supply tanks.
- c. WASH TANK-10. The valve and flow meter control water flow to tanks 10 and 9. Water flows into 10, to 9, and to sewer.
- d. WASH TANK-12. The valve and flow meter control water flow to tanks 12 and 11. Water flows into 12, to 11, and to sewer.

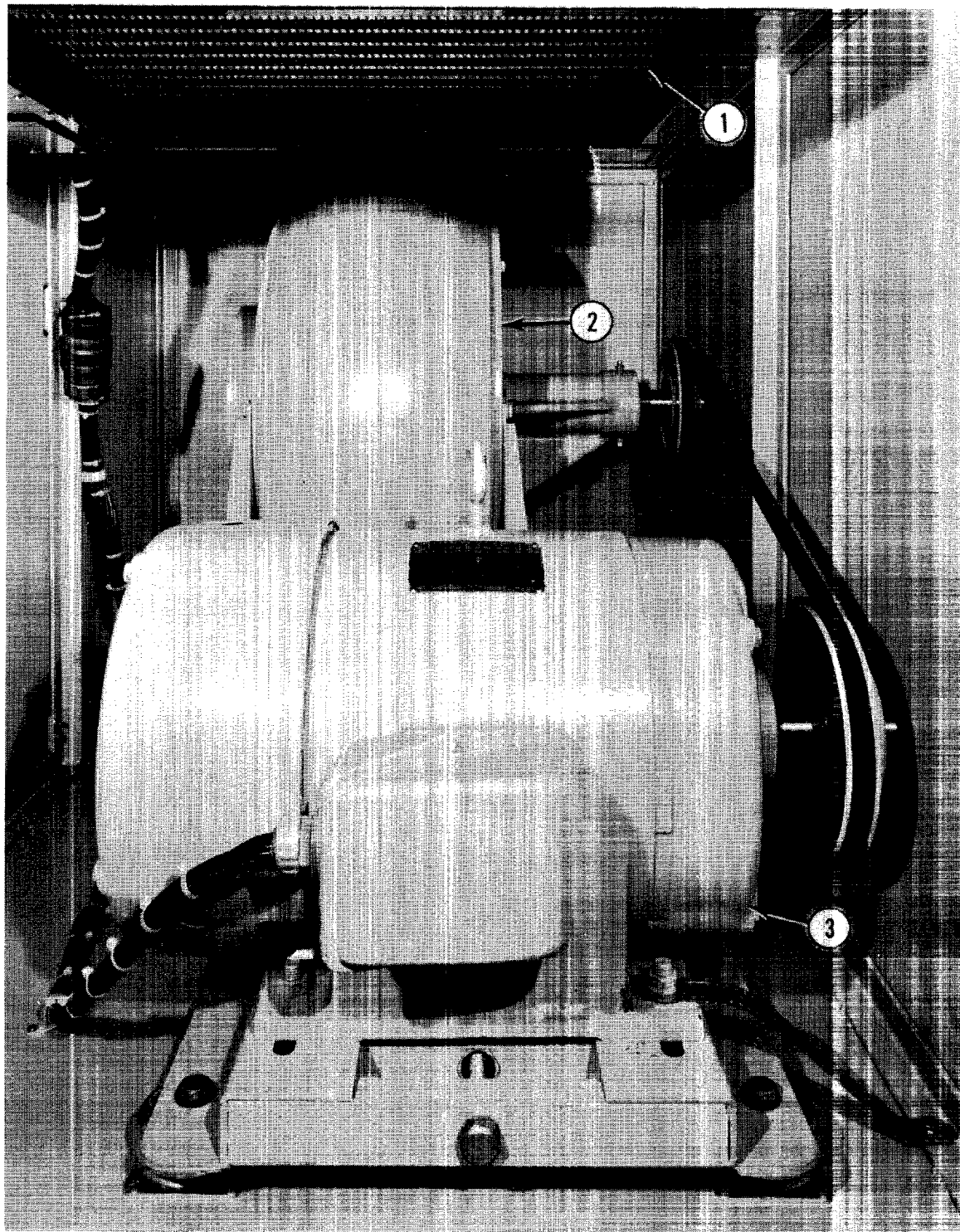
NOTE

Water cannot enter the processor until the valve between the building air supply and the processor air system is opened. This valve is located on top and near the take-off end of the solution control panel. It must be opened to supply 25 ± 5 psi air to open the valves in the hot and chilled water lines and to establish temperature control.

1.2.11 Air Dryer

1.2.11.1 Air Circulation. Air circulation through the dryer is provided by a blower installed in the blower compartment of the dryer cabinet. See Figure 8. A five horsepower motor drives the blower fan via

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1. Heater

2. Blower Housing

3. Motor

Figure 8. Air Dryer Blower Motor

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pulleys and a drive belt at one of four speeds as selected by the BLOWER SELECTOR control (see item b., Section 1.2.3); i.e., at 600, 900, 1200, or 1800 rpm.

Make-up air flows through a louver in the front lower panel, through a filter mounted in a bracket attached to the louver, and into the motor-blower compartment. The blower draws recirculated air over heaters and forces the air through two high-efficiency filters, one above the other, and into the pressure plenum from which it enters the ends of slotted air tubes.

The tubes are located so that warm air is directed at both sides of the product as it is transported by the dryer roller transport system.

1.2.11.2 Electrical Heater. Dryer heat is supplied by a 12-element electrical heater that has 11 elements controlled by the two HEATER SELECTOR controls on the electrical control panel, and one heater element controlled by an adjustable thermostat on the take-off end of the dryer cabinet. Positions for the two HEATER SELECTOR controls on the electrical control panel are from 0 through 7 on the left switch and from 8 through 12 on the right switch. Position 1 on the left switch activates the thermostatically controlled element. As the switch is moved ahead one setting, one or more heater element is energized. Including the thermostatically controlled element, a total of seven heater elements are turned on with the left control. The right control can be set to energize elements eight through twelve with one element added at each increased setting.

The HEATER SELECTOR controls must be set at a point that allows the thermostatically controlled heater element to cycle. If it remains on continuously (indicated by a signal light between the two HEATER SELECTOR controls on the control panel) one or more elements should be used. On the other hand, if the controlled element is off continuously, one or more elements should be turned off.

1.2.11.3 Exhaust Damper. A damper near the top rear side of the dryer cabinet can be opened or closed to regulate the volume of make-up air forced into the dryer plenum. The damper is contained in an adapter which is connected to an exhaust duct.

1.2.11.4 Overheat Alarm. An overheat alarm is provided by a second thermostat located next to temperature controlling thermostat and near a thermometer that indicates the temperature in the dryer pressure plenum. The alarm thermostat is set 5F above the desired drying temperature. Should the temperature in the pressure plenum reach that setting, a bell mounted in the feed stand of the processor will ring.

1.2.11.5 Filter Gage. This gage, located near the juncture of the upper and lower sections of the dryer cabinet on the take-off end of the processor, is a simple device that compares the air pressure on each side of the filter. The gage is adjusted to signal a need to change the filters when they become dirty. The condition is checked once a week by placing the BLOWER SELECTOR control on position 4 so that the dryer blower operates at peak speed (1800 rpm) to provide the highest pressure differential.

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1.2.11.6 Dryer Transport. The dryer transport system consists of entrance and exit crossovers, four vertical rows of unopposed belt-driven rollers mounted in a slightly staggered path, two turnarounds, a crossover dryer drive roller, and air tubes mounted between the transport rollers. Rollers in both-down paths are overdriven, and the last half of the over-all dryer transport system is overdriven in respect to the first half. Thus, there is a slight increase in rotation for each succeeding vertical row of rollers. This progressive increase helps prevent overlapping between prints.

Down-path rollers have grooves machined in their pulley hubs. (These hubs are smaller in diameter than those on the up-path rollers.) Rollers must be replaced in the correct row whenever they are removed for cleaning or maintenance purposes.

The air tubes (see Figure 9) direct heated, high-velocity air onto both surfaces of the product. Also an air tube is located above the entrance dryer crossover for further removal of moisture. The guide pins mounted on the air tubes direct the product from one transport roller to the next.

1.2.12 Auxiliary Drum Dryer

1.2.12.1 General. The air dryer section of the RT-24 Processor has no provision for ferrotyping prints. Therefore, an auxiliary drum dryer is supplied as part of the over-all processor system.

Normally, the dryer is used in the same room with the processor, but it has four wheels so it can be transported to another area, plugged into a 220-volt outlet, and used to dry prints separately from the processor. Two views of the auxiliary drum dryer are shown in Figure 10.

As prints are placed on the conveyor and approach the entrance feed belt assembly into the drum dryer, the prints pass over a water

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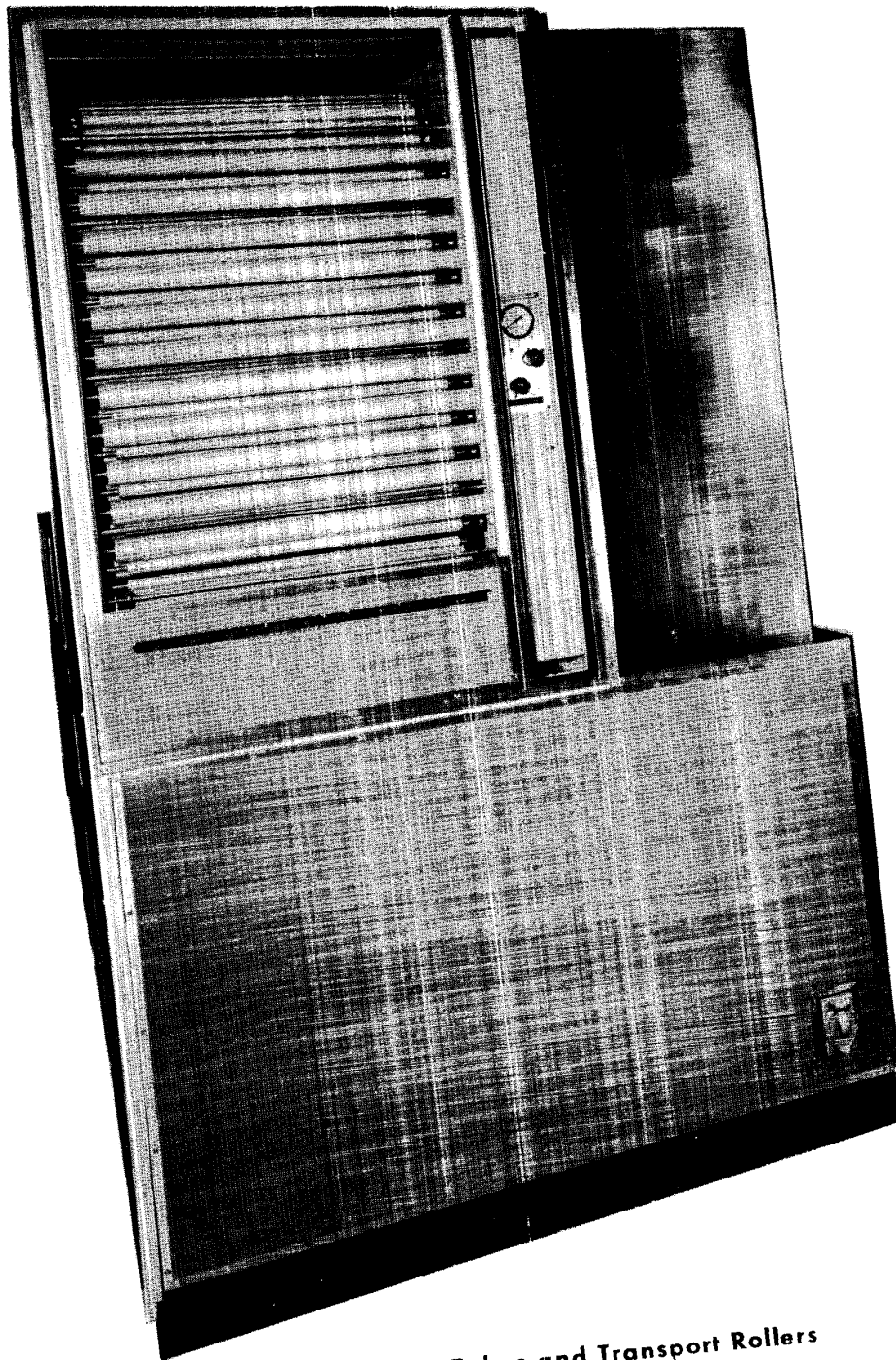
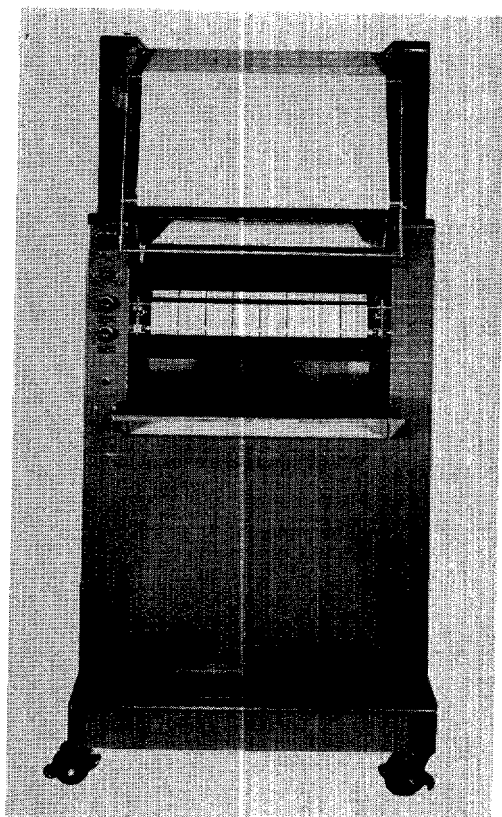


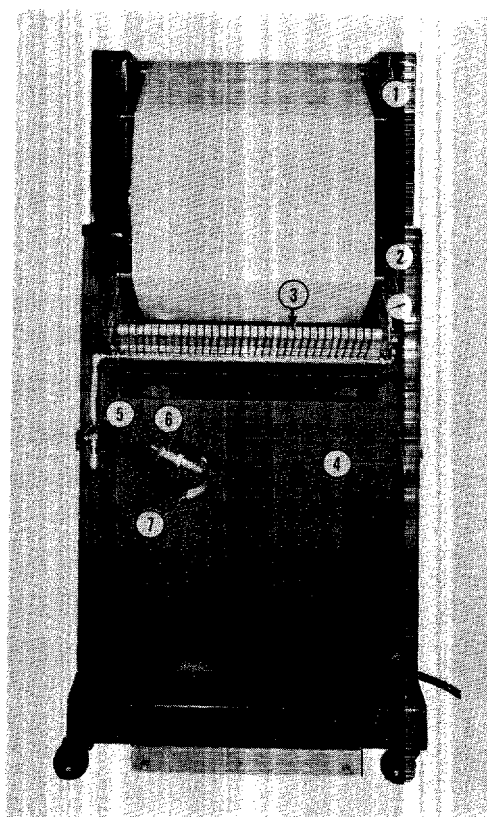
Figure 9. Dryer Air Tubes and Transport Rollers

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TAKE-OFF END



FEED END



1. Expansion Tank Water Level Indicator
2. Thermometer
3. Conveyer Assembly
4. Pressure Roller Release Lever
5. Spray Valve
6. Spray Water Inlet
7. Spray Water Outlet

Figure 10. Auxiliary Drum Dryer

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spray tube that spans the width of the drum dryer entry way. The spray is controlled by a needle valve located in the water line on the rear of the dryer.

After passing over the spray tube, the prints are transported by the entrance feed belt assembly and around the three-inch pressure roller to the surface of the heated drum. The drum, which is chrome plated and highly polished, is 26 inches in diameter and is 24 inches wide. It is heated by circulating hot water over its inner surface. An endless canvas belt, the same width as the drum, retains the prints against the drum throughout the ferrotyping cycle.

1.2.12.2 Drum Heating System. This system is a closed water circuit that recirculates water between the drum and heater. Small water losses are replaced through an expansion tank at the top of the dryer cabinet. The tank has an indicator float so that the water level can easily be determined. Enough water should be kept in the system to support the float when the dryer is cold but not enough to overflow the tank when the water is up to operating temperature. A thermometer located by the entrance feed belt assembly indicates water temperature.

A pump, powered by an electrical motor and mounted to the base of the dryer assembly, recirculates the water throughout the heating system. Water leaving the pressure side of the pump flows over the electrical heater elements which are contained in a 20-inch length of 3-inch diameter pipe. This heated water then flows through a line to the front center axis of the drum, through a flexible line inside the drum, and finally into the chamber covering the entire interior surface of the drum. After circulating through this chamber, water flows out through another flexible line which leads through the rear center axis of the drum and down to the suction side of the pump to complete the cycle.

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The 25-amp, three-element electrical heater, which is located in the back side of the dryer base, is thermostatically controlled. The thermostat knob on the front of the heater housing is readily accessible after opening the door on the rear of the dryer cabinet. See Figure 11. The knob can be set between 60F and 250F. In addition, there is a pilot light, located on the take-off end of the dryer cabinet near the front just beneath the other electrical controls, that glows when the three heater elements are operating.

1.2.12.3 Drum Drive. The drum is powered by a quarter-horsepower electric motor whose speed is varied by an electronic controller and a micropotentiometer labeled SPEED CONTROL. The motor and associated drive components set on a shelf over the water pump and heater in the base of the dryer. See Figure 12.

A hysteresis clutch is connected directly to the motor shaft to provide a means of varying drum drive torque. This electromagnetic device is adjusted with a variable autotransformer whose knob is labeled TORQUE CONTROL. An increase in electricity to the clutch increases torque.

A timing belt and pulleys are used to transmit force from the output shaft of the hysteresis clutch to the input shaft of a 150-to-1 reducer assembly. This assembly is located on the same shelf as the motor and clutch. Power from the output side of the reducer is transmitted by another timing belt to a pulley on the shaft of a three-inch diameter rubber drive roller. The drive roller contacts the dryer drum and causes the drum to rotate. A lever near the front and on the feed end of the dryer is pushed downward to raise the drum 1/4 inch up from the drive roller whenever the machine is not operating.

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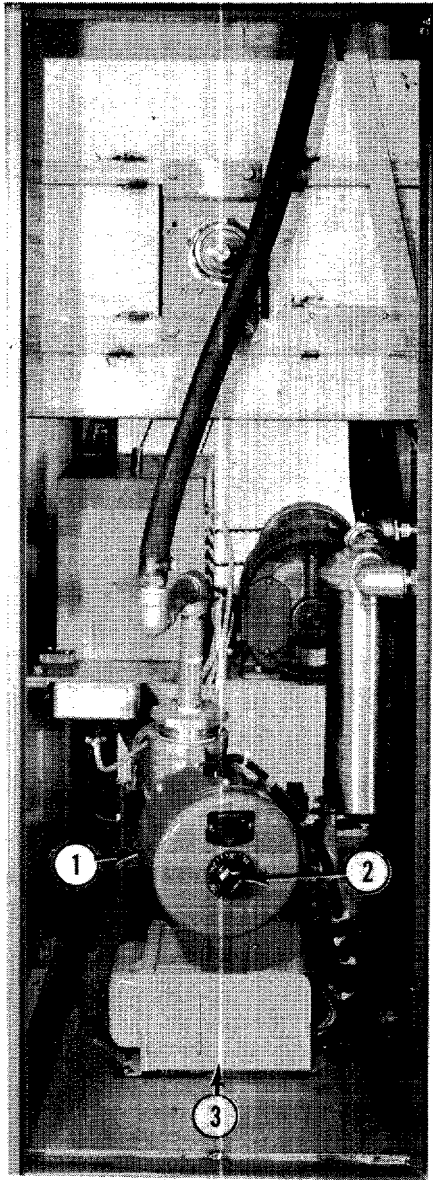


Figure 11. Auxiliary Drum Dryer Heater

1. Heater
2. Thermostat
3. Step-Down Transformer
4. Drum Drive Motor and Clutch
5. Drum Drive Controller
6. Drum Drive Reducer
7. Water Pump

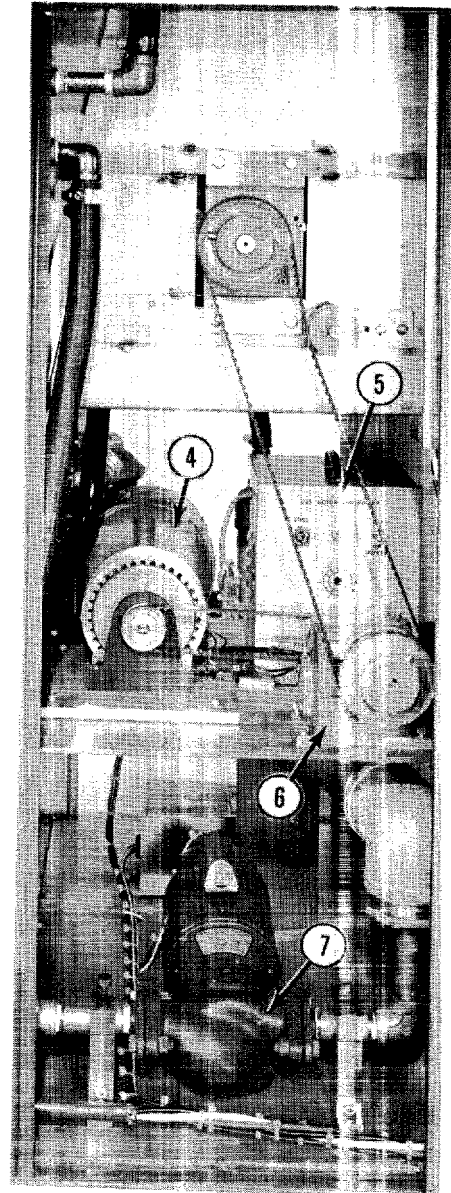


Figure 12. Auxiliary Drum Dryer Drive and Pump Assemblies

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NOTE

The drum must be raised when the dryer is idle to prevent a flat spot forming on the drive roller.

1.2.12.4 Water Spray System. As mentioned earlier, prints are sprayed with water as they are fed into the dryer. Water for this spray enters the inlet coupling from a hose and flows to the spray tube through a filter and shut-off valve. The tube is oriented to spray upwards onto the emulsion of the prints which are fed into the dryer emulsion down. There are 49 holes, spaced 1/2-inch apart, across the 24-inch length of tubing.

Excess water falls into a catch pan where it is drained away through a return hose connected to the building drain system.

1.2.12.5 Electrical System. Elements for the water heater require 208-volt, 3-phase, 60-cycle, electrical service. Other components in the drum dryer use 110-volts which is furnished by a step-down transformer located just under the heater in the base of the dryer cabinet. See Figure 11. The power cord has a 208-volt four-prong plug. There is a receptacle for this plug on the take-off end of the air dryer cabinet. The fourth (green) wire in the cord and receptacle provides grounding connections only. Details of the electrical system including a schematic and a wiring diagram are shown in Drawing No. 1-120-E-1319 which is included in Appendix B in this manual.

The electrical controls are described below. Those names printed in capital letters coincide with the labels for each control

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found on the upper take-off end of the drum dryer cabinet. Controls described in items a. through g. are all located in this place;

- a. MAIN Control. This control is a 30-amp circuit breaker, it is the primary electrical switch for the auxiliary drum dryer.
- b. DRIVE Switch. A toggle switch used as the ON-OFF control for the drive motor. There is a 40-second delay in the drive operation after this switch is first turned ON to allow components in the controller unit (see item i., following) to warm up to running temperature.
- c. PUMP Switch. Another toggle switch used as the ON-OFF control for the hot water recirculating pump.
- d. Fuse Holder. This unit contains a 10-amp fuse to protect the transformer that steps the 208 voltage down to 110 voltage.
- e. SPEED CONTROL. This micropotentiometer is adjusted to vary the speed of the drum rotation.
- f. TORQUE CONTROL. Drum torque can be increased or decreased with this variable autotransformer.
- g. Pilot Light. This light will glow whenever the thermostat on the water heater is on and energizing the heater elements.
- h. Temperature Control. The water heater in the base of the dryer cabinet has an adjustable thermostat that can be set from 60F to 250F. The control is shown in Figure 11 .

- i. Motor Controller. All components for the controller are housed in an enameled steel cabinet mounted beside the drive motor on a shelf in the dryer base as shown in Figure 12. Controls on the face of the cabinet are described below:
 - a. FUSE Holder. Contains a 3-amp fuse to protect the controller circuitry.
 - b. Pilot Light. Glows when the controller is energized.
 - c. POWER Switch. The ON-OFF switch which in this application is always left ON. Its function is served by the DRIVE switch on the outside of the dryer cabinet.
 - d. FORWARD-REVERSE Switch. In this application, the switch is always left in the FORWARD position.
 - e. Motor ON-OFF Switch. This switch is always left in the ON position. (It is associated with the FORWARD-REVERSE switch.)

1.2.13 Rack Hoist

To facilitate the removal and replacement of crossover and rack assemblies, a hoist is mounted on the wall near the front side of the processor. Figure 13 shows the hoist holding a rack assembly that is halfway out of a tank.

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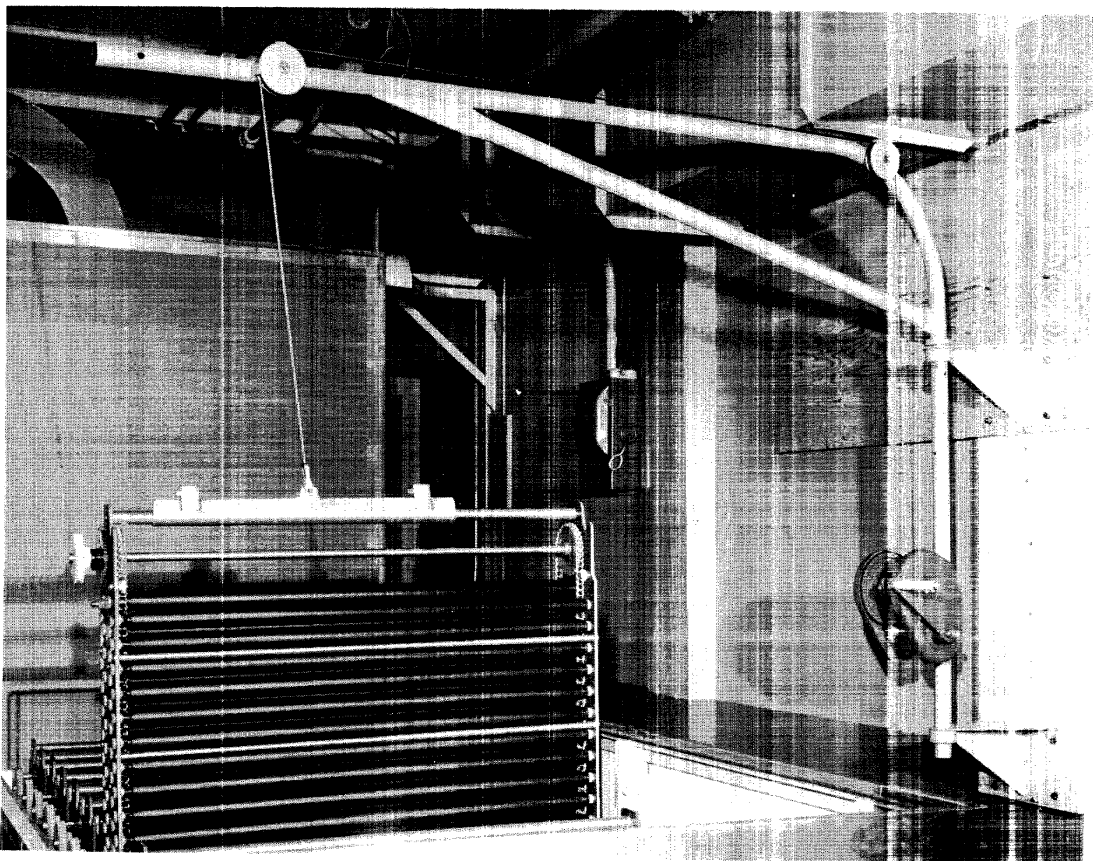


Figure 13. Rack Partially Removed from Tank by Hoist
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As shown in the Figure, the hoist is L-shaped with the longer arm extending almost six feet to reach over any of the l2 tanks in the processing section. When not in use, the arm swings back against the wall.

The lifting fixture is attached to a pin and clevis on the end of a steel cable. The cable winds around the core of a hand-powered winch which incorporates a brake that is set to prevent unwinding. Two men should remove or replace the crossover and the rack assemblies: One man to operate the hoist; one to guide the assemblies into the tanks.

SECTION 2

OPERATION

2.1 PREPARATION FOR OPERATION

2.1.1 Initial Checks

Since the storage tanks for the developer and fixer solutions are located in an area that is separate from the processor, check the valves associated with these tanks to be sure that they are open. Check the air pressure from the building air system to the processor. It should be at 25 ± 5 psi. The print collector bin should be attached to the take-off slot of the air dryer as depicted in Figure 14.

2.1.2 Installing Racks and Crossovers

Remove the three large covers over the processing section to expose the 12 tanks. The tanks are numbered from 1 to 12 beginning at the feed end.

NOTE

When the tanks are dry, it is more economical to fill with solutions after installing the racks. Otherwise, placing racks into full tanks would displace considerable solution and cause it to overflow into the sewer.

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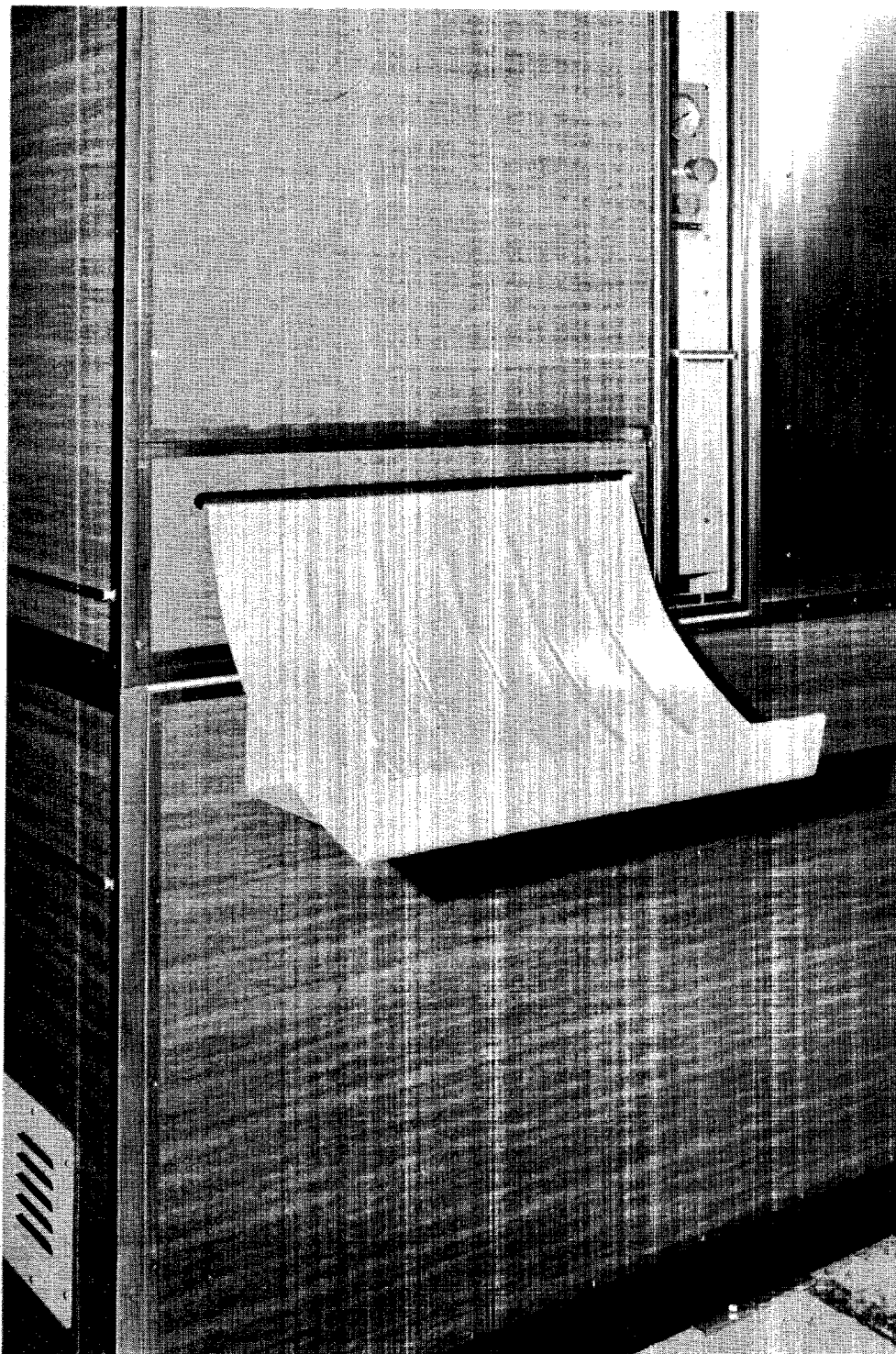


Figure 14. Print Collector Bin

For convenience, select rack No. 1 and set it on its base next to the processor and proceed as follows:

- a. Attach hooking fixture on end of cable for hoist on top center bar of rack.
- b. Then, set brake on hoist and slowly crank until rack is above edge of processing section.
- c. Swing rack over tank 1.
- d. Release brake while holding crank handle.
- e. Slowly lower rack into tank. If alone, guide rack with one hand; operate crank with other. (Obviously, this job is easier with two men.)
- f. When rack is seated, check drive gear to be certain it meshes with worm gear on drive shaft. Set retaining latch on front side.
- g. Proceed with rack No. 2, etc., in same fashion.
- h. When all racks are installed, place crossovers in position. These are numbered from 1 to 11. Also the entrance and exit crossovers must be placed in their respective positions in the processing section.

2.1.3 Filling Tanks

Before proceeding, be certain that the tank drain valves, whose knobs are located in three vertical rows on the bottom of the solution control panel (Figure 6), are all closed. Then proceed as follows:

- a. Place directional control valves for FIX-1, FIX-2, and DEV. in FILL position.

- b. Solutions should flow into the first five tanks. If not, check valves in panel labeled FIX NO. 1 CONTROLS, FIX NO. 2 CONTROLS, and DEVEL. CONTROLS. All valves in these sections should be opened except for FILTER BYPASS.
- c. When each solution reaches its overflow point, turn respective control valve to REPLENISH.
- d. Start wash water flow by opening four WASH TANK valves.

NOTE

If hypo clearing agent is to be used in tank 8, position the control valve on H.C.A.

- e. On electrical control panel, turn MAIN switch, RECIRCULATION switches 1, 2, and 3, and REPLENISHMENT switch all to ON.

CAUTION

Never operate the pumps controlled by the three RECIRCULATION switches when the systems are dry. Such operation could damage pump seals.

- f. On solution control panel, check the air pressure gage for air to operate replenishment system. Pressure should be about 1 1/2 psi. If necessary, adjust pressure with regulator valve on top of panel.

- g. Hold a piece of paper in entrance slot against right side of guide to trip air pressure switch and energize replenishment cycle. Adjust FIX 1 and 2 and DEV. metering valves to obtain desired flow rate on respective flow meters. Remove paper from entrance slot when replenishment rates are established.
- h. Set DEV. TEMP CONTROL on solution control panel by opening controller door and moving red needle to exact temperature reading desired. It takes about five minutes for the developer to come up to temperature.

NOTE

It is recommended that an accurate, long-stemmed dial thermometer be used to check developer temperatures in the tanks just before starting process.

2.1.4 Initiating Dryer Operation

Check the two thermostats (see Figure 9) on the take-off end of the air dryer cabinet. If adjustments are required, remove the narrow clear-plastic panel for access to these controls. The thermostat labeled TEMP should be set on the desired temperature in degrees F. It controls the cycling heater element in the dryer system. The control marked ALARM should be set 5F higher.

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On the electrical control panel (see Figure 2) at the feed end of the processor, set the BLOWER SELECTOR and the HEATER SELECTOR controls at their lowest values that will provide satisfactory drying of the product. Be sure to turn ON the DRYER circuit breaker to energize the blower motor and heater elements. It takes approximately 30 minutes for the dryer to come up to operating temperature.

2.1.5 Auxiliary Drum Dryer Setup

If glossy finished prints are required, lock the two wheels under the take-off end of the drum dryer, plug the power cord into the receptacle on the air dryer, and attach the water supply and drain hoses for the spray system. Turn the water on at the control point in the building system.

Check the supply of water in the expansion tank by observing the float indicator on top of the tank. If low, take out the cap and fill with water to about 1/3 tank capacity.

Next, turn ON the MAIN and PUMP switches, open the door on the rear side, and set the thermostat for the water heater at desired point (180 to 200F) to dry prints. It takes about 20 minutes to reach operating temperature. The auxiliary drum dryer is now set up for operation.

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2.2 PROCESSOR OPERATION

NOTE

The operator should feed several 20- by 24-inch test prints each day when the processor is first turned ON. This action will help clean off foreign matter which may have accumulated on the rollers during shutdown.

- a. Check to see that all electrical controls are ON.
- b. Set SPEED CONTROL to obtain desired F.P.M. indicated on SPEED INDICATOR.
- c. Check DEV. TEMP thermometer and thermometer on take-off end of dryer for required operating temperatures. If auxiliary dryer is used, check its thermometer too.
- d. Adjust FIX-1, FIX-2, and DEV. flow meters by turning their respective needle valves.
- e. If dryer and developer have reached operating temperatures, processing can begin.
- f. Cut a piece of sheet film to width of leading edge of print for leader tab. Figure 15 shows proper arrangement of various size prints for feeding procedure. The film must be at least 7 mils thick and 10 inches long. (Once cut the film tab can be used over and over.)

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- g. Attach the cut-sheet film to leading edge of print with 1-inch wide Scotch Pressure Sensitive Tape No. 471, use either brown or black (not transparent). Since prints are apt to buckle if tape is applied when stretched, follow steps below to avoid problem:
1. Remove appropriate length of tape from roll and stick one end to a flat surface so that length hangs freely.
 2. Allow length of tape to hang for at least one minute to relax stretching caused when tape was removed from roll.
 3. Butt cut-sheet tab to leading edge of print and carefully apply tape so that about 7/8-inch width of tape is on cut-sheet tab and 1/8-inch width is on print.
- h. Feed prints emulsion side up. Be sure edges of prints are square with sides of feed tray; then advance print until it is drawn into processor by rotating pacer rollers.

CAUTION

1. Never feed prints less than five inches long.
2. Delay at least five seconds between print feedings to prevent overlapping of following prints.

2.3 AUXILIARY DRUM DRYER OPERATION

Turn on the valve controlling the water spray to provide a spray between conveyor rollers and onto the paper prints. Raise up the lever to allow the rubber pressure roller to contact the surface of the drum. Turn ON the DRIVE toggle switch, set the SPEED CONTROL to cause the drum to rotate slowly. Adjust TORQUE CONTROL at about half its maximum value.

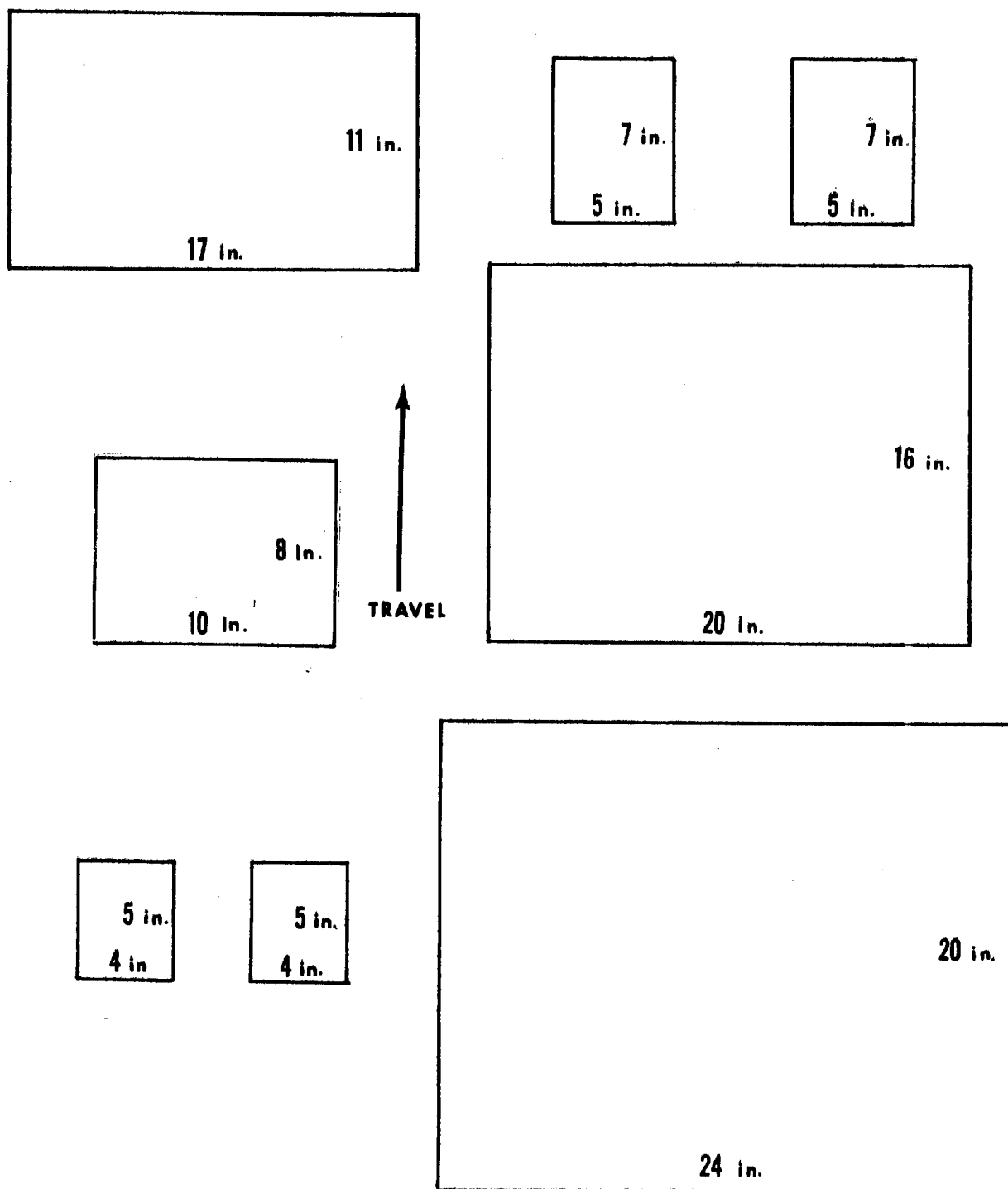


Figure 15. Proper Arrangement for Feeding Various Sizes of Paper

SECTION 3

TROUBLE SHOOTING

3.1 GENERAL SERVICE NOTES

As a general rule, any difficulty in the processing system can cause failure of prints to transport not only at that location but at any point beyond it. This situation is particularly true if the difficulty is chemical. For example, too high a developer temperature can cause failure of prints to transport in the fixer rack, and improperly compounded or replenished fixer can cause transport failure in the dryer.

If several prints are involved in a transport failure covering a fairly large area of the processor, it can normally be assumed that the failure began at the point nearest the exit end. Thus, if product fails to transport in the dryer and the wash rack, the trouble most likely started at the point farthest along in the dryer, and the prints following piled up in a chain reaction.

Note that some of the reasons for trouble may not be apparent because they may not cause transport difficulty until after several hundreds or thousands of prints have been fed. Thus, an improperly compounded or replenished solution may process up to 3,000 prints with no apparent trouble, only to cause failure to transport thereafter.

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3.2 PROCESSOR TROUBLE CHART

Trouble 1. Cocking or Twisting of Prints in Processing Section

Possible CauseProbable Remedy

- | | | |
|---|---|------|
| 1. Buildup on developer rack rollers | Clean with <input type="text"/> Developer System Cleaner | 25X1 |
| 2. Algae or bacterial growth in wash rack (slimy condition on rollers accompanied by failure of films to transport at proper speed) | a. Wash with warm water and a plastic material, such as Scotch Brite
b. Clean rack with <input type="text"/> Developer System Cleaner. This will not necessarily remove the dark-colored stain from the rollers, but this is not harmful | 25X1 |
| 3. Crossover assembly twisted or not seated properly | Be sure all assemblies are square and seated properly | |

NOTE

Any of the causes of cocking or twisting in Trouble 1 may be a reason for failure of product to transport in any section of the processor.

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Trouble 2. Failure of Prints to Transport in Processing Section

<u>Possible Cause</u>	<u>Probable Remedy</u>
1. Rack chain loose (indicated by hesitating rack rollers)	Adjust chain, tighten studs. Replace chain if adjustment is insufficient
2. Chain drive sprocket worn - chain clinging to sprocket teeth	If sprocket has irregularly shaped teeth or deep pits at sides of teeth or is badly warped, replace. Upper sprocket of racks most commonly affected
3. Crossover or turnaround roller out of place	Gear teeth must mesh with teeth of large gear
4. Vertical-path roller sprocket not in mesh with chain	Tighten or replace loose chain or replace worn sprocket.
5. Master roller bearing worn	Replace master roller bearing. Wear most common on drive side
6. <u>Leader tab came loose</u>	Tab must be carefully attached to the leading edge of the print with Mylar waterproof pressure sensitive tape
7. Binding in rack (indicated by rack jumping up and down in tank). Unit hard to turn by hand	<ul style="list-style-type: none"> a. All rollers must have sufficient end play to turn freely. b. If rack drive shaft or master roller drive shaft of turnaround is tight, replace bearing affected c. Be sure unit is seated properly d. Check squareness of unit e. Inspect the rack chain

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Trouble 2. Failure of Prints to Transport in Processing Section (Cont'd.)

<u>Possible Cause</u>	<u>Probable Remedy</u>
8. Excessive wear in rack drive shaft bearings	Replace bearings
9. Double thickness of product fed	Care must be taken in feeding cut sheet product. Double thicknesses may be drawn into processor if lead sheet has not passed entrance crossover
10. Crossover or rack rollers encrusted with heavy layer of chemical deposits	<p>a. Good housekeeping practices must be observed. (See daily and weekly cleaning suggestions in Section 4)</p> <p>b. Remove deposits with a plastic abrasive material, such as Scotch Brite</p> <p>c. Developer rack may be cleaned with <input type="text"/> Developer System Cleaner Precede and follow use of cleaner with thorough washing</p>
11. Rack or crossover rollers coated with yellowish-white chemical deposits (sulfurization)	<p>a. Rack may be cleaned with a plastic abrasive material, such as Scotch Brite</p> <p>b. If fixer solution is murky in processor tank, it should be changed. Cloudy condition of fixer replenisher indicates improper mixing and should also be changed</p> <p>c. Fix-wash crossover may be cleaned with <input type="text"/> Developer System Cleaner Precede and follow use of cleaner with thorough washing</p>

25X1

25X1

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Trouble 2. Failure of Prints to Transport in Processing Section (Cont'd.)

Possible Cause

Probable Remedy

12. Foam in developer tanks

- a. Check for product or other obstructions covering intake to pump
- b. Check for solution leak on intake side of pump. Pump must be turned off to detect solution dripping on intake side. Before start-up, check solution level in tanks

13. Poor washing

Insufficient water pressure

14. Low solution level

- a. Leak at any of the plumbing joints - check solution level in tanks
- b. Check to see that drain valve is completely closed
- c. Solution not being properly replenished

15. Rack main-drive gear (worm) worn (indicated by a jumping or hesitating rack)

Replace gear. Check rack for bind. Be sure rack is seated properly so that worm gear is fully engaged with worm on drive shaft

16. Crossover drive gear not in mesh with rack gear

Align gears properly. If gear worn, damaged, or badly warped, replace

17. Damaged product

Damaged product should not be fed, particularly if leading edge is torn or folded

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Trouble 2. Failure of Prints to Transport in Processing Section (Cont'd.)

Possible Cause

Probable Remedy

- | | |
|---|--|
| 18. Warped roller on crossover, rack, or turnaround | Unusually warped roller can cause prints to be ejected. This is especially critical if warped roller immediately precedes or follows crossovers or turnarounds |
| 19. Improperly mixed solutions | Mix solutions according to directions on package |
| 20. Improperly replenished solutions | See Trouble 10 |
| 21. Solution temperature too high | |
| a. Developer controller set too high | a. Reset thermostat to maintain developer solution as recommended |
| b. Developer and/or wash thermometer faulty | b. Check developer solution and wash water with long-stemmed thermometer of known accuracy. Place thermometer between undriven side of rack and tank |
| c. Freshly mixed solutions not given time to cool | c. Developer and fixer temperature must not exceed recommended processing temperature |
| d. Incoming water supply not turned on or insufficient flow | d. Serious contamination of the dryer rollers can result if the water supply is left off. Be sure water supply to processor is adequate and all valves are turned on |

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Trouble 2. Failure of Prints to Transport in Processing Section (Cont'd.)

<u>Possible Cause</u>	<u>Probable Remedy</u>
22. Developer recirculation pump not operating properly	
a. Pump motor not operating	a. Make sure pump switch on control panel is on
b. Solutions not up to level (see Trouble 2, Cause 14 in this chart)	b. Solutions must be above the level of the pump flooding outlet in the processing tank for the pump to operate
23. Solutions diluted with water or improperly mixed	If print densities are lower than normal, over-dilution of the developer is indicated. Check for possible leak in heat exchanger. Check developer or fixer as indicated
24. Crossover dirty	Rinse and wipe daily with damp vinyl sponge or cloth
25. Wash water dirty	Racks must be clean. If this condition occurs, consider the use of water filters on both hot and cold incoming water lines
26. Binding in crossover. Unit hard to turn by hand	All rollers must have sufficient end play to turn freely. Studs must be free of encrustation

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Trouble 3. Failure of Prints to Transport in Dryer

Possible Cause

1. Tacky emulsion caused by many of the conditions noted in previous troubles
2. Rollers binding in dryer entrance or exit crossover assemblies
3. Broken gear teeth on rollers of entrance or exit crossover
4. Transport rollers dirty
5. Badly warped transport rollers
6. Transport rollers not seated in holders
7. Dryer transport rollers hesitating
8. Insufficient drive for transport rollers (may be indicated by hesitation of rollers)

Probable Remedy

- Most notable reasons for tacky emulsions entering dryer:
- a. Any of the solution or wash water temperatures too high
 - b. Any of the solutions improperly mixed or compounded, or over-diluted with water
- Free rollers so that they spin easily
- Replace
- Wipe with damp rag. Because of ball bearings, do not immerse in water. If smooth use Scotch Brite No. 477
- If warping is apparent, replace
- Be sure bearings are seated properly in holders
- a. Check seating of transport rollers
 - b. Must have sufficient end play to turn freely
 - c. Ball bearings must turn freely
- If dryer drive belt appears loose, badly worn or slippery, replace belt

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Trouble 3. Failure of Prints to Transport in Dryer (Cont'd.)

<u>Possible Cause</u>	<u>Probable Remedy</u>
9. Dryer air tubes improperly positioned or located	Be sure to snap tubes into locking position when they are installed
10. Bent guide pin	All pins on air tubes must be aligned
11. Failure of overlapped film sheets from processing section to transport	Check feeding procedure
12. Worm bearings in turnaround	Replace bearings
13. Warped rollers in turnaround	Replace as needed
14. Inner row of turnaround rollers binding	Inner rollers must spin freely
15. Transport rollers improperly located	Remove and replace rollers in proper location. All down-path rollers have grooves in their hubs

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Trouble 4. Lower than Normal Solution Recirculation Rate

Possible Cause

1. Foreign particle in solution pump
2. Heat exchanger clogged
3. Tubing in recirculation system clogged

Probable Remedy

Remove obstruction. Pay particular attention to pump outlet

Clean. If some recirculation is present,

☐ Developer System Cleaner may be used 25X1

- a. If chemical deposits are present, clean developer rack, tank, and recirculation system with ☐ Developer System Cleaner 25X1
- b. If foreign particle is lodged in tubing, it must be removed. Pay particular attention to the tubing connection at the pump outlet in the side of the tank

Trouble 5. Power Loss

Possible Cause

1. Circuit breaker tripped.

Probable Remedy

Reset. If trouble persists notify maintenance chief

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Trouble 6. Scratches Lengthwise on Prints

Possible Cause

1. Dryer air tubes out of position
2. Dryer air-tube guide pins out of line or loose
3. Any roller in processing section held stationary (indicated by many fine dark random lines)
4. Improper spacing between master roller and cluster roller on turnarounds and crossovers

Probable Remedy

Be sure to snap tubes into locking position when they are installed

Remove dryer air tubes and check guide pins visually for straightness. Straighten any which may be bent. Tighten loose pins with a drop of epoxy cement. Wide lines generally indicate scratching nearest to the entrance of the dryer; thin lines indicate scratching toward exit of dryer

Any hesitation in the drive system must be eliminated. Pay particular attention to pacer rollers, entrance crossover, and first two rollers of developer rack

Spacing should be .028 inch between master roller and cluster roller

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Trouble 7. Drying Streaks on Prints

Possible Cause

1. Dirty air-tube slits
2. Slit width not maintained properly
3. Dryer temperature too high

Probable Remedy

Clean interior of air tubes by immersing them in warm water and agitate vigorously. DO NOT SOAK tubes

Using the screws on the side of the air tubes, readjust air slits to .022 inch at the area of the screws

Adjust temperature. Check with known thermometer

Trouble 8. Failure of Replenisher System to Operate

Possible Cause

1. REPLENISHMENT switch not turned on
2. Valve controlling air to pressure switches closed
3. Pressure switch stuck open

Probable Remedy

Turn switch ON. Pilot light will glow when switch is ON

Open valve to obtain about 1 1/2 psi reading on gage located above the two FIX three-way valves on the solution control panel

Replace switch. Notify maintenance chief

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Trouble 9. Thumping Sound

<u>Possible Cause</u>	<u>Probable Remedy</u>
1. Drive sprocket or chain worn or out of line	Replace sprocket and/or chain
2. Drive motor chain not at proper tension	Adjust tension

Trouble 10. Decrease in Print Density

<u>Possible Cause</u>	<u>Probable Remedy</u>
1. Developer reaching exhaustion (gross under-replenishment)	Check replenishment rate and/or mix fresh solution
2. Old or exhausted replenisher	Mix new solution
3. Developer temperature low	Adjust developer controller as recommended
4. Developer solution diluted with water or improperly mixed	Be sure to follow instructions on the developer package when mixing. Check for possible leak in heat exchanger. Change developer

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Trouble 11. Increase in Print Density

Possible Cause

1. Developer temperature too high
2. Slight over-replenishment
3. Developer replenisher improperly mixed

Probable Remedy

Adjust controller as recommended

Check replenishment rate

Mix replenisher according to directions on the package

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3.3 AUXILIARY DRUM DRYER TROUBLE CHART

Trouble 1. Failure of Drum to Rotate

<u>Possible Cause</u>	<u>Probable Remedy</u>
1. Pressure drive roller not in contact with drum	Raise up lever so that roller will contact drum
2. Drive motor inoperative	<ul style="list-style-type: none">a. Turn ON DRIVE switch. Remember, there is a 40-second delay before operation to allow components in controller unit to warm upb. Check POWER switch on motor controller in base of dryer cabinet. Pilot light should glow to indicate switch is ONc. Check motor controller FUSE holder and replace fuse if necessary. If problem is not corrected, notify maintenance chiefd. Check SPEED CONTROL. It should be set to obtain required drum rotatione. Check fuse. Replace if necessary. If trouble persists, notify maintenance chief
3. Torque setting too low	Increase torque setting as required

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Trouble 2. Drum Does not Heat Properly

Possible Cause

1. Heater thermostat set incorrectly
2. Pump inoperative
3. Water shortage in heater system
4. Air bind in drum

Probable Remedy

- Check thermostat in base of dryer cabinet and set as required
- Turn PUMP switch ON
- Fill expansion tank 1/3 full.
Check for leaks
- Bleed air through vent located on inside of drum (when drum is cold, serious burn can result if water is hot.)

Trouble 3. Failure of Water Spray

Possible Cause

1. Filter clogged
2. Low water pressure
3. Spray nozzles dirty

Probable Remedy

- Replace filter cartridge
- Check building water supply. Open shut off valves further
- Clean nozzles with stiff bristle brush

Trouble 4. Prints Sticking to Drum

Possible Cause

1. Non-wet prints entering dryer
2. Dirty drum

Probable Remedy

- a. Increase water spray
 - b. Lower processor air dryer temperature to allow damp-dried prints
- Polish drum per instructions in Section 4.8.1.

SECTION 4

MAINTENANCE

4.1 GENERAL

The procedures and checks described in this section are those that can be performed easily by operating personnel. Involved equipment repairs should be handled by competent maintenance technicians.

Experience with roller transport processors indicates that proper operation of the RT-24 Processor with minimum service problems depends on well-established work habits and good housekeeping. Personnel should be trained to follow the recommended daily check before start-up, the nightly clean-up, and the weekly inspection outlined below.

4.2 DAILY CHECK

4.2.1 Start-Up

Proceed with the following steps:

- a. Start water flow by turning the WASH valves on. Check circulation rate in flow meters.
- b. Remove center bottom panel on solution control panel and open petcock on drain line from air filter. When moisture ceases to run out of petcock, close valve and replace panel.
- c. Turn ON MAIN switch and other electrical switches (see Section 2.2) on the feed stand.

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- d. Remove the processing section covers and wipe down the entrance rollers and crossovers.
- e. Turn ON the air for the replenisher system.
- f. Feed a test paper base product and check the replenishment rate at the flow meters.
- g. Check the operation of the racks and crossovers.
- h. Remove the front upper panel on the dryer cabinet and check operation of the dryer transport roller section.
- i. Check the developer temperature.
- j. Check the dryer temperature.
- k. Replace the covers and panel.

4.2.2 Shut-Down

Proceed as follows:

- a. Before turning OFF power, be sure that the processor has been cleared of prints.
- b. Reduce machine speed to "0" and turn OFF the MAIN and other switches on the electrical control panel.
- c. Remove all processing section crossover assemblies and rinse them with warm water. Use a soft brush to remove any deposits that may have formed. Don't use abrasives.

CAUTION

The exit crossover roller assembly should never be immersed in water hot or cold. Instead, wipe all rollers with a sponge dampened with clear, cold water.

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- d. Without removing the racks, wipe off all rack rollers above the solution level.
- e. Wipe off the stainless-steel pacer rollers at the entrance to the processing section.
- f. Turn the WASH control valves off.
- g. Prop open or remove the processing section covers so that the chemical-laden fumes from the tanks can escape. This precaution will reduce staining of processor parts.

NOTE

If the processor is operated on a 24-hour-per-day basis, steps a. through c. should be carried out but once every 24-hour period.

4.3 PRODUCT SALVAGE

When trouble occurs, do not turn OFF the MAIN switch. Proceed as follows:

- a. Pull a crossover ahead of the malfunction.
- b. Remove the paper prints at this point to avoid further pile up. Collect these prints in a tray of water to avoid their sticking together.
- c. Clear the processor.
- d. Re-introduce the collected prints into the processor at the point of interruption.

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4.4 WEEKLY PROCEDURE

- a. Remove the crossover assemblies and wipe the rollers with a damp vinyl sponge or cloth.
- b. Check tension of rack chains. Any sign of roller hesitation indicates a loose chain.

CAUTION

To prevent contamination of developer with fixer solution, place a splash guard on the partition between the developer and fixer tanks whenever removing the fixer rack.

- c. Remove the roller racks, rinse them with running water, and wipe them with vinyl sponge or cloth. Rinse water should not exceed 120F. Be sure to clean all removable chemical deposits on the sides of the racks around the gears, chain tightener, etc.
- d. Rotate the rack by hand to be sure that all of the rollers turn freely. Adjust the chain tension if necessary.
- e. If there is doubt that the rack is square, lay it on a flat surface and check.

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- f. While the racks are out, examine the solution tanks for the presence of any foreign matter and for solution clarity.
- g. Reinstall racks and crossovers. Check all crossover and rack gears to be sure they are seated properly.
- h. Check dryer entrance and exit crossovers to be certain they are seated properly.
- i. Inspect the dryer air tubes. If the slits are clogged, clean by agitating the tubes vigorously in a tray of warm water and wipe dry. Do not soak since swelling of the slits could result.
- j. Check the dryer intake filter. Replace if dirty.
- k. Check the dryer plenum filters by operating blower at top speed (setting 4 on BLOWER SELECTOR for 1800 RPM) and observing filter gage on take-off end. If gage reads "CHANGE FILTER" on its orange flag, replace filters with new ones.

4.5 Frequency of Solution Change

Although most solutions will last indefinitely with proper replenishment, it is desirable to drain, clean, and check the processor on a periodic basis.

4.6 How to Use Developer System Cleaner

WARNING

Contains Sulfamic Acid - Causes Burns

Do not get in eyes, on skin, on clothing. In case of contact, flush skin or eyes with plenty of water for at least 15 minutes. For eyes, get medical attention.

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NOTE

1. Do not use in the fixer system of the processor; sulfurization may result.
2. Do not use in stronger solution than recommended; cleaning action may be reduced.

Directions for use when developer solution is being changed:

- a. Drain the developer solution from the processor and remove the developer racks.
- b. To prevent contamination of the fixer with cleaner solution, place the splash guard on the partition between the developer and fixer tanks.
- c. Remove the developer-system filter cartridge and replace the filter cover.
- d. Fill the two developer tanks with approximately 20 gallons each of pre-mixed Developer System Cleaner.
- e. Turn on the developer recirculating pump and allow the cleaner to recirculate for approximately fifteen minutes.
- f. While the cleaner is recirculating, place the developer racks in a sink and flush them with warm water. Use the remaining Developer System Cleaner to clean the two developer racks. If necessary, mix more cleaner. While rotating the rack drive gear, apply cleaner to all the rollers and rack side plates. The cleaner can be applied with a brush, or spray. A plastic spray bottle is recommended.

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- g. Flush the racks with warm water; then wipe all rollers with a damp sponge to remove all cleaner solution. Repeat paragraphs f and g, if necessary.
- h. Clean crossovers Nos. 2 and 3 in the same manner. For stubborn deposits, the rollers may be scrubbed with a soft brush wet with Developer System Cleaner.

WARNING

Wear goggles or other eye protection when using brush; note WARNING at beginning of this section.

- i. After the two racks, crossovers, and tanks are clean, drain the cleaning solution from the tanks; then flush with warm water.
- j. Replace the racks and fill the tanks with warm water. Turn on the recirculation pump and the main drive. Allow to run for about five minutes. Drain the tanks and repeat this procedure until the water shows no discoloration.
- k. Install a new developer filter cartridge and mix new developer solution.

NOTE

Racks must be thoroughly cleaned of all chemical deposits; otherwise, cleaner may be absorbed by the deposits with resulting contamination of the new developer.

4.7 CHANGING FILTER CARTRIDGES

The housings containing these filters are located one behind each of the three bottom panels on the solution control panel. Each panel is easily removed by lifting up on its bottom edge until the two holes clear their retaining screws and pulling the panel out. The cutout will clear the four drain valve knobs.

The filter cartridges recommended are Fulflo honeycomb tubes, No. E17X10-S, made of wound viscose fiber over a stainless steel core. Each filter housing holds one cartridge.

To change a filter cartridge, proceed as follows:

- a. Close inlet and outlet valves to filter.

NOTE

If it is necessary to continue solution flow while changing filter, open the valve in the bypass line around the filter before closing the valves on the intake and outlet sides.

- b. Loosen air vent screw on top of container and drain screw on bottom and allow shell to drain.
- c. Loosen cover nut on top of cover to remove shell.
- d. Discard used filter and wipe inside of shell clean.
- e. After removing tissue wrapper, insert new filter into shell. Press tube down firmly.
- f. Place new gasket in lip of shell and press up against filter head making sure that gasket is firmly seated all around.

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- g. Engage cover nut with threads of center post and screw down firmly to compress filter tube and establish seal at top and bottom.
- h. Close drain screw and open outlet and inlet valves. (Close bypass valve if it was opened.) When liquid runs out of air vent screw, trapped air has been released and the screw should be tightly closed.
- i. After five minutes operation, tighten air vent screw and cover nut if necessary.

4.8 AUXILIARY DRUM DRYER

4.8.1 Polishing Drum

When prints begin to stick to the surface of the drum at the end of the drying cycle, the drum needs to be polished. Two polishing compounds are applied in sequence on the drum. The first is Aloxite. It is mixed with water to form a paste and then applied with a clean, damp cloth. When applying the compound, cover about one third of the drum's surface at a time. Keep the compound off the belt. Allow the compound to dry and then remove it with a clean, dry cloth. Move to the next third section of the drum and repeat the polishing operation.

The second compound is Cake Bon Ami (Part No. 861-8240-155) Use only this form of Bon Ami because it, unlike the powdered product, contains a special stearate which remains on the drum and acts as a releasing agent for the dried prints. Apply the Bon Ami with a clean, damp cloth on the surface of the drum. Polish one third of the drum completely before moving to the next section. Allow it to dry and remove it with a clean, dry cloth. Bon Ami will require from one to three applications before the surface is satisfactory for ferrotyping. Water should collect in droplets on the drum to indicate that the surface is polished enough.

25X1

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4.8.2 Changing Water Filter Element

Water sprayed onto the prints entering the drum dryer is filtered through a cartridge identical to that described in Section 4.7. Follow the directions in that section with one revision: the water supply must be shut off before attempting the change, there is no bypass valve.

4.9 LUBRICATION

Table 1 on the next page is a lubrication chart covering the requirements for the RT-24 processor and the auxiliary drum dryer.

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TABLE 1
LUBRICATION CHART

CAUTION

When lubricating parts, use extreme care to prevent dripping oil on the crossovers and racks or in the solution tanks.

Component	Type of Lubrication	Frequency	Technique
Worm Drive Gears:	NLGI - No. 2 Lithium	Every 6 months	Apply a small amount
a. Detector Roller Drive	Ball and Roller Bearing Grease, such as		on the surface of
b. Rack Drive	Shell Oil Co. Alvania		the gear teeth
c. Dryer Drive (located behind rear dryer panel)	No. 2 or equivalent		
Drive Chains:	Same grease as used	Check monthly to	Apply to surface of
a. Pacer Rollers	for Worm Drive Gears	establish periodic	chain. Be careful not
b. Main Drive		need	to catch fingers in
c. Dryer Drive (located behind rear dryer panel)			moving chains or sprockets
Main Drive Motor Gear Box	SAE No. 90 gear oil	Check every 6 months	Fill to "Oil Level" hole indicated on gear box. Add oil through upper hole marked "Oil Fill"
Air Dryer Blower Motor	Light oil, such as SAE No. 10	Every 6 months	Several drops of oil in holes in top and bottom of motor

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TABLE 1
LUBRICATION CHART (Cont'd.)

Component	Type of Lubrication	Frequency	Technique
Auxiliary Drum Drive Motor	Light oil, such as SAE No. 10	Every 6 months	Several drops of oil in holes in top and bottom of motor
Auxiliary Drum Drive Gear Reducer Box	SAE No. 90 gear oil	Check every 6 months	Fill to "Oil Level" hole indicated on gear box. Add oil through upper hole marked "Oil Fill"

The following products are equivalents of Alvania No. 2:

Atlantic Refining Co.	- Atlantic 54
Cities Service Oil Co.	- Trojan H-2
Sun Oil Co.	- Prestige 42
Sinclair Oil Co.	- Litholene EP-2
Socony Mobil Co.	- Mobilux No. 2
D. A. Stuart Oil Co.	- Dasco 2-L
Texas Oil Co.	- RCX - HD Spec.

PROCESS SPECIFICATION No. _____ DATE 10-11-65

MACHINE RT-24
 PRODUCT Paper
 KIND ~~KODAK~~ Kodabromide F-2
 SIZE 24-inch
 PROC. EMUL. UP ☐ DOWN ☒

MACHINE SPEED DIAL SETTING 5.5 ft./min.
 FILM STRIP SPEED 5.5 ft./min.
 SECONDS PER RACK 45
 THREAD UP Fill

PROCESSING STAGE	CHEMICAL		REFL RATE (PER MIN)	TEMP °F	(Min.) TIME	NO. R	AGITATION	COMMENTS
	TANK	REPL						
Developer	Dektol 1:2	Dektol 1:2	100	68	1 1/2	2	Recirculation and Roller Action	1. Replenisher rates are tentative
Fixer #1	Versamat Type A	Versamat Type A	150	68	1 1/2	2	"	extensive runs could indicate minor
Fixer #2	F-5	F-5	75	68	3/4	1	"	changes.
Wash	H ₂ O		3 1/2 ² gal	68	5 1/4	7	Roller Action	2. Three ratios are provided; setting is 3 1/2 gals./min. for each.
Dryer				* 120	3	4		3. Air sensor pressure setting is 1 3/4 psi; main air line setting is 20 psi.

~~DAMPER SETTINGS:~~

~~INTAKE~~ * Blower selector set at 2
 Heater selector set at 2

EXHAUST _____

Emulsion

Kodabromide F-2

Approved For Release 2005/02/17 : CIA-RDP78B04770A001100030005-3

EXPOSURE

Sensitometer

1B

Filter

3000°K

Exposure Time

1/2 sec.

Log E_{11} = 1.08

PROCESSING

Gamma

1.70

Process Control Curve for
use with K1-24 Processor
Specification for
Kodabromide F-2 Paper

Approved For Release 2005/02/17 : CIA-RDP78B04770A001100030005-3

LOG EXPOSURE

DENSITY

PROCESS SPECIFICATION No. _____ DATE 10-11-65

MACHINE RT-24
 PRODUCT Paper
 KIND ~~EMULSION~~ Resisto Rapid
 SIZE 24-Inch
 PROC. EMUL. UP ☒ DOWN ☐

MACHINE SPEED DIAL SETTING 8.5 ft./min.
 FILM STRIP SPEED 8.5 ft./min.
 SECONDS PER RACK 30
 THREAD UP Full

PROCESSING STAGE	CHEMICAL		REPL. RATE (PER MIN)	TEMP °F	(Min.) TIME	NO. R	AGITATION	COMMENTS
	TANK	REPL.						
Developer	Dektol 1:2	Dektol 1:2	200	68	1	2	Recirculation and Roller Action	1. Replenisher rates are tentative;
Fixer #1	Versamat Type A	Versamat Type A	300	68	1	2	"	extensive runs could indicate minor
Fixer #2	F-5	F-5	150	68	1/2	1	"	changes.
Wash	H ₂ O			68	3 1/2	7	Roller Action	2. Three ratosights are provided; setting is 3 1/2 gal./min. for each.
Dryer				* 120	2 1/4	4		3. Air sensor pressure set at 1 3/4 psi; main air pressure set at 20 psi

~~RAMPER SETTINGS~~

~~XXXXXX~~ * Blower selector set at 2
 Heater selector set at 2

~~XXXXXX~~ _____

Dry to Dry 8 1/4 Min.

Emulsion

Resisto Rapid N-2

Approved For Release 2005/02/17 : CIA-RDP78B04770A001100030005-3

EXPOSURE

Sensitometer

1B

Filter

3000°K

Log E_{11} = 1.08

Exposure Time

1/2 sec.

PROCESSING

Gamma

1.32

11
↓

Process Control Curve for use
with RT-24 Processor Specification
for Resisto Rapid N-2 Paper

DENSITY

Approved For Release 2005/02/17 : CIA-RDP78B04770A001100030005-3

LOG EXPOSURE